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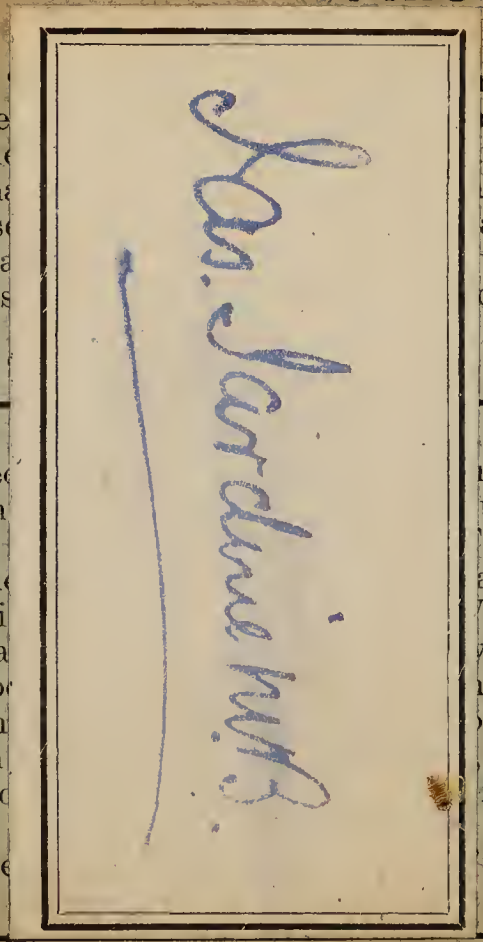

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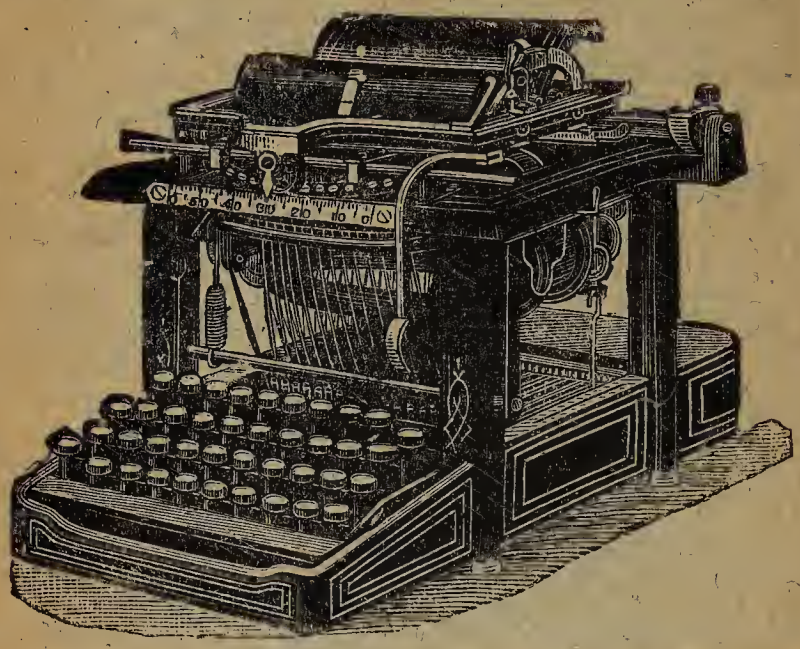

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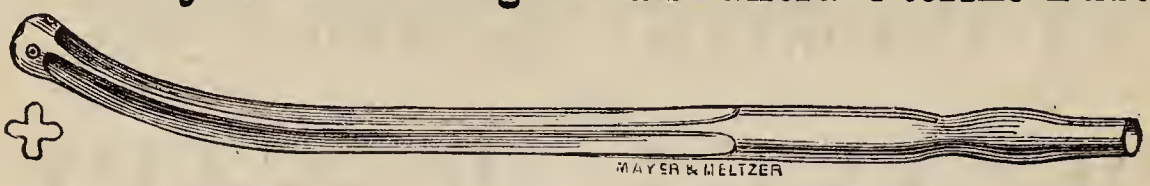

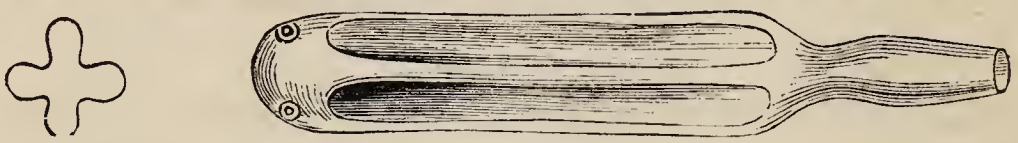

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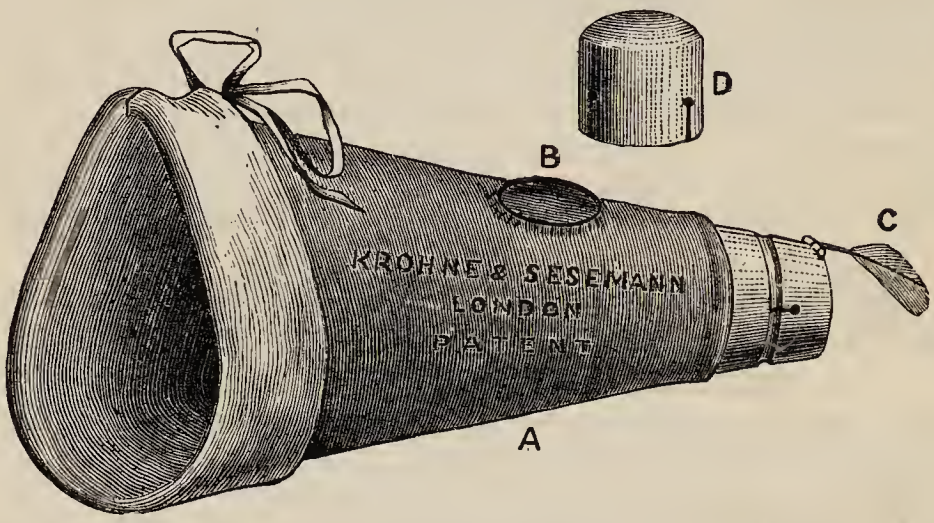

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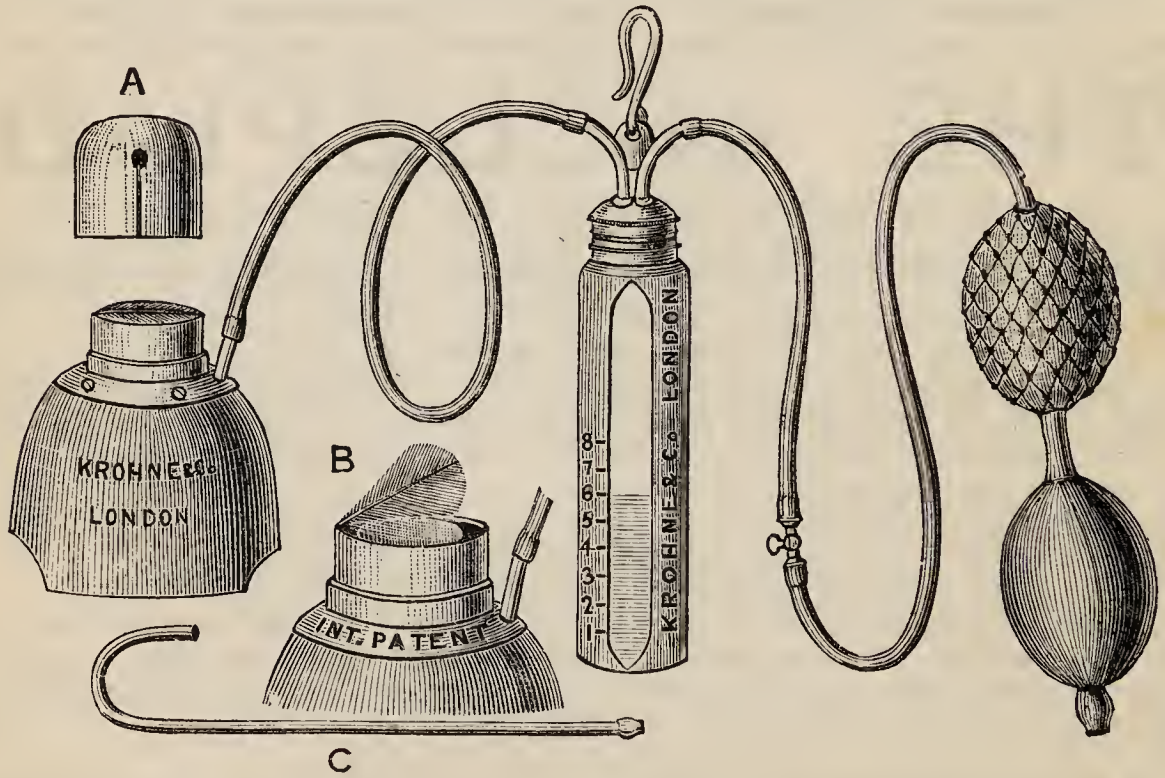

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NEW DRUGS, FOODS, INSTRUMENTS, &c.

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LACTATION—(*Lacto = to suckle*).

It seems almost a platitude to emphasize the importance of nutrition at this particular period of a woman's life, for, irrespectively of the natural demands upon the constitution, there is the great liability to complications and disorders in which the feeding occupies a prominent position. Apart from this, a comparatively healthy woman

REQUIRES AN ABUNDANCE OF

tissue-forming food, not only for herself, but also for her offspring, which she is often unable to obtain, either from defective digestion processes or deficient appetite. Under these circumstances, a food-stuff capable

OF IMMEDIATE ABSORPTION

and a high tissue-forming power will prove a welcome supplement to the ordinary diet, or even supply its place when necessary. This is substantially realised by †MALTO-CARNIS (Caffyn), for it may, with every advantage to the patient, be substituted for the usual tea or coffee, since it will be found not only to POSSESS THEIR STIMULATING

and refreshing properties, but also the requisite materials for the secretion of milk and nourishment of the tissues.

It is generally admitted that when the flow of milk is excessive, it is desirable that *fluid* nourishment

SHOULD BE DIMINISHED

as far as practicable—a detail somewhat difficult to carry out with the ordinary measures, but which is satisfactorily solved by administering *LIQUOR CARNIS (Caffyn) in tablespoonful doses at short intervals, since that amount is equivalent to a quart of ordinary beef-tea or soup. It also possesses the great advantage of affording a ready and reliable means of accurately adjusting the nutritive income to the requirements of the patient, which is always so difficult in ordinary feeding.

Medical Practitioners are invited to write to the Liquor Carnis Company, Limited, 50, Holborn Viaduct, London, E.C., for a free supply of Caffyn's Liquor Carnis, Malto-Carnis and other Raw Beef Juice Products.

On the other hand, should the secretion of milk be deficient, it is necessary to give plenty of fluid nourishment. This can readily be accomplished by administering

† MALTO-CARNIS (Caffyn),

which will be found invaluable ; for it contains all the materials necessary for the formation of milk presented in a form pleasing to the patient, soothing to the stomach, and handy for the nurse.

The proprietors have no hesitation in thus specialising the use of these Preparations, SUPPORTED AS THEY ARE

by the unequivocal expressions of approval which they are continually receiving from members of the Medical Profession in reference to their value in the management of the puerperal state.

* LIQUOR CARNIS (Caffyn).—"A nourishing fluid, consisting of the Uncooked Juice of Meat or Muscle-plasma, permanently preserved by the addition of a definite quantity of a Carbohydrate. A valuable food and tonic for infants and invalids."—*British Medical Journal.*

† "MALTO-CARNIS (Caffyn) contains two-thirds (66 per cent.) of Liquor Carnis (Caffyn) (Uncooked Juice of Beef) in combination with Extract of Malt and Cocoa. Valuable for weak digestions, also to travellers."—*The Journal of Laryngology and Rhinology.*

UNIVERSITY OF EDINBURGH.

FACULTY OF MEDICINE.—WINTER SESSION.

The Winter Session begins in October.

Materia Medica .. Prof. T. R. Fraser, M.D.
Chemistry .. .. Prof. Crum Brown, M.D.
Surgery .. .. Prof. Chiene, M.D.
Institutes of Medicine or Physiology—
Prof. Rutherford, M.D.
Midwifery and Diseases of Women and Children .. .. Prof. Simpson, M.D.
Clinical Surgery (Mon. and Th.)—
Prof. Annandale, M.D.
Practice of Physic—
Prof. Grainger Stewart, M.D.
Clinical Medicine (Tu. and Fr.)—
Profs. Grainger Stewart, Fraser, and Greenfield; and Prof. Simpson on Diseases of Women.
Anatomy .. Prof. Sir William Turner, M.B.
General Pathology .. Prof. Greenfield, M.D.
Botany .. .. Prof. Balfour, M.D.
Natural History .. .. Prof. Ewart, M.D.
Medical Jurisprudence
Prof. Sir Douglas Maclagan, M.D.

LECTURERS.—Clinical Instruction on Diseases of Children, James Carmichael, M.D., and John Playfair, M.B. Comparative Embryology, George Brook.

SUMMER SESSION.

The Summer Session commences at the beginning of May.

Botany, Prof. Balfour, Medical Jurisprudence, Prof. Sir Douglas Maclagan. Clinical Medicine, by Profs. Grainger Stewart, Fraser, and Greenfield; and Prof. Simpson on Diseases of Women. Clinical Surgery, Prof. Annandale. Chemistry (Advanced Class), Prof. Crum Brown. Natural History, Prof. Ewert.

LECTURERS.—Mental Diseases, T. S. Clouston, M.D.; Diseases of the Eye, D. Argyll Robertson, M.D.; Clinical Instruction on Diseases of Children, James Carmichael, M.D., and John Playfair, M.B.; Comparative Embryology, G. Brook.

Practical Instruction is given in Laboratories, furnished with all the necessary appliances, and in Tutorial and Practical Classes in connection with the above Chairs, under the superintendence of the Professors.

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University of Edinburgh, *December*, 1891. JOHN KIRKPATRICK, Secretary of Senatus.

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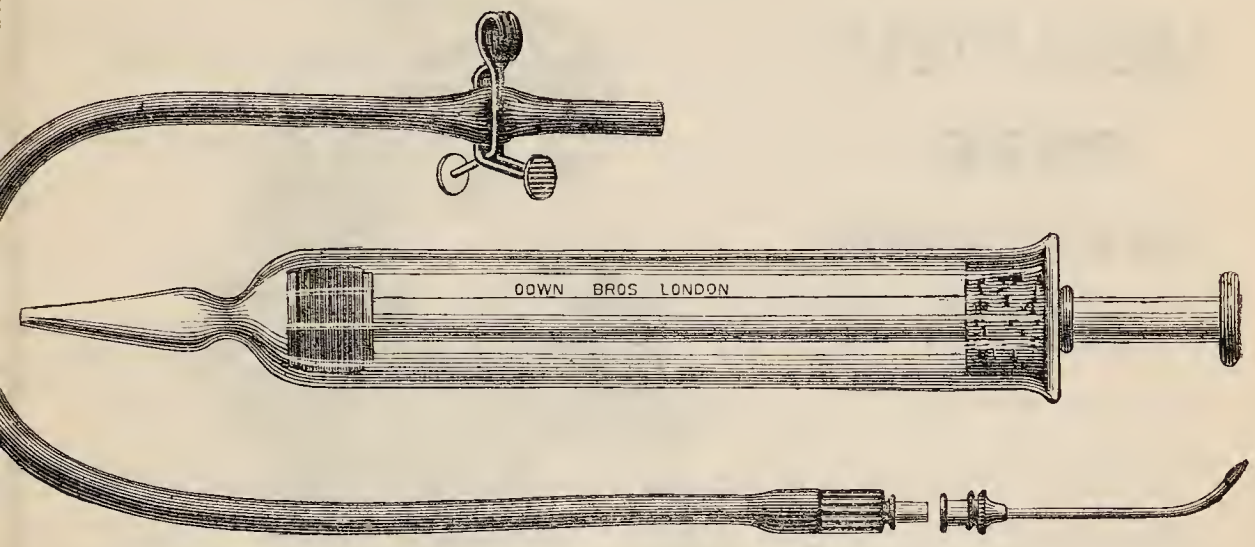

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Arranged Alphabetically.

GENERAL MEDICINE AND THERAPEUTICS.

ACONITE.—Fatal Dose of.

The recent death of a pauper patient in Shoreditch by the accidental administration of aconite liniment, and the effects of the same medicine among patients, affords instructive information as to the fatal dose of aconite and aconitine ; and I am indebted to Mr. Frederick L. Norris, M.B., for assistance in giving this. By some error a dispensing bottle of tinct. nuc. vom. was filled up with methylated aconite liniment. My analysis showed that the supposed tincture was nearly all aconite liniment, with a quite small proportion of tincture of nux vomica. Of this liquid, a dose of 9 minims was prescribed and given to Eliza Burley, aged 58, and she died in rather more than four hours after its administration with decided symptoms of aconite poisoning. The 9 minims correspond to about 5 grains of aconite root, contained about one-thirtieth of a grain of aconitine, and is about half the quantity which killed Dr. Meyer. It is the smallest quantity which I had previously known to be fatal to an adult. Burley had atheromatous deposits in the cardiac valves, with some, but not great, incompetence of the aortic valves. This condition contributed, perhaps, to the fatal result. Another patient took the same dose of the liniment, and suffered from symptoms of aconite poisoning, others suffered from 6 minims, but all recovered. One old man was prescribed 12 minims, vomited, and recovered. The maximum medicinal dose of tincture of aconite (the full *B.P.* dose) that I have known taken is 15 minims, and of English aconitine $\frac{1}{100}$ grain. These doses are each equal to about one-third of the dose which killed Eliza Burley. It is perhaps of importance that aconite should not be taken in full doses at less intervals than six hours. I find that on myself its local and constitutional effects do not disappear till after the lapse of from five to seven hours. (Dr. Thomas Stevenson, British Medical Journal, August 7, 1891, p. 995.)

ACROMEGALY.

At the Manchester Pathological Society, on May 13th, 1891, Dr. Bury exhibited a Brain and Thyroid Gland taken from the body of a woman aged twenty-three years. She had lost strength and suffered from severe headache for three years, and eighteen months before death her sight began to fail. When admitted, under Dr. Ross, the following symptoms were observed: Great prominence of the orbital arches; a low retreating forehead; enlargement of the nose, lips, tongue, and body of the lower jaw; the voice low-pitched and monotonous, the speech slow and deliberate; the right lobe of the thyroid unduly prominent; the hands, feet, and digits greatly developed, the increase in breadth and thickness being the most marked; kyphosis and slight scoliosis of the cervical and upper dorsal vertebræ; the abdomen enlarged and its walls thickened; the limb muscles soft and flabby, but no paralysis. With the exception of severe headache starting in the left temple, no sensory disturbance. Reflexes normal; taste, smell, and hearing unaffected. The left eye nearly blind, temporal hemianopsia of the right eye. Sugar in the urine, and death from coma. At the necropsy a large pulpy tumour at the base of the brain excavating the sella turcica and extending from the optic chiasma (which with the optictracts was much compressed) to the cerebellum. Microscopically, it had the appearance of a glioma. Each lobe of the thyroid was enlarged and contained a cyst. Some pendant masses of tissue attached to the front of the pericardium, similar to pieces of a persistent thymus, showed only fat cells under the microscope. The heart and the liver were enlarged. The uterus was infantile; there were small cysts in each ovary. Dr. Bury also reviewed the clinical history and morbid anatomy of acromegaly, and discussed its affinities. It is noteworthy that in both acromegaly and cretinism the thyroid gland is either diseased or atrophied. Persistence of the thymus, hypertrophy or a neoplasm of the pituitary body, are less constant features of acromegaly. Nevertheless, it is a significant fact that the anterior lobe or glandular portion of the pituitary body originally develops from the mouth cavity; and that in acromegaly the posterior part of the mouth—viz., the palate, the tonsils, and uvula—is usually increased in size. (The Lancet, June 20, 1891, p. 1383.)

ANTIPYRINE AS A HÆMOSTATIC.

Professor G. Cesari, of Modena, finds that antipyrine applied to an injured blood-vessel or to living tissues, whether in the form of fine powder or watery solution, does not irritate or dry or produce any caustic effect on the tissues, or cause pain. It gives

rise to local anæmia more or less marked according to the length of time the agent is applied. A fifty to one hundred per cent. watery solution produces no change in the calibre of the capillaries; but made to bathe the veins of the mesentery of a frog, or the jugular or femoral vein of a rabbit, more or less perceptible narrowing of these vessels can be observed. When applied in solutions containing at least fifty per cent. of antipyrine, or in the form of powder, in both cases the application should be made on plugs of cotton-wool; it arrests hemorrhage more or less speedily. Antipyrine, if placed in contact with blood at its normal temperature, thickens and condenses it, and, without causing coagulation, prevents it from escaping from the vessels. It stops secondary hemorrhage. (American Journal Medical Sciences, October, 1891, p. 406.)

ARISTOL.

Aristol (the biniodide of dithymol) is rapidly coming into favour as an excellent substitute for iodoform. It possesses all the therapeutic properties of iodoform without having the inconveniences of its odour and its irritant and poisonous action. It is a reddish-brown amorphous powder, becoming more and more pale as it loses its iodine from exposure to heat or light. It is soluble in water, and glycerine, slightly so in alcohol, and very soluble in ether, chloroform, and liquid vaseline. The powdered aristol has already rendered great service as a cicatrizing agent in ulceration of the skin and mucous membranes, in epithelioniata, in ulcers of the leg, and in tuberculous and syphilitic ulcerations. Its application to these ulcerations is not painful, nor does it produce any of the phenomena of general poisoning, as does iodoform. Under the form of a pomade containing from ten to twenty parts of aristol to one hundred of vaseline, it has been used in cutaneous diseases, such as psoriases, eczema, lupus, etc. Some observers have employed it in diseases of the nose, throat, and larynx, and it has been used in gynæcological-practice in the treatment of endometritis, erosions of the cervix, and vulvar eczema. Swieciki has made pencils and suppositories thus :— ℞ : Aristol 80 grains, gum arabic a sufficient quantity to make five pencils; and, ℞ : Aristol 7½ to 15 grains, ol. theobrom. sufficient to make one vaginal suppository. It may be used in ethereal solution, or in collodion if so desired. Internally it has been given in pill-form associated with the hyposulphite of sodium in cases of fetid bronchitis and gangrene of the lung, with excellent results. In four or five days the sputa lose their offensive odour and the general condition is greatly improved. In pulmonary phthisis it diminishes the amount of expectoration. (Medical News, February 28, 1891, p. 250.)

CAMPHORIC ACID.—Therapeutic Action of.

The therapeutic value of camphoric acid in acute and chronic catarrhs of the respiratory mucous membrane, acute and chronic cystitis, and in the night-sweats of phthisis has recently been the subject of study in the medical clinic at Griefswalder, under the direction of Dr. Hartleib, whose results are furnished in the *Centralblatt für Klinische Medicin*, No. 5, 1891. The drug was administered in the form of an alcoholic solution, 1 part of camphoric acid in 11 of alcohol, in glycerin solution, and in aqueous solution, with the addition of bicarbonate of sodium. In angina of various forms, one-half to one per cent. solutions were employed as a gargle and as a local application, but the remedy appeared to possess no advantage over the drugs used for the same purpose in chronic bronchitis and in pulmonary tuberculosis, though some patients claimed to receive some relief from its employment. Very favourable results, however, are claimed to have followed its employment in cases of chronic cystitis, three out of five being absolutely cured within three to six weeks, the remedy in these cases being employed in one-half per cent. solution, with which the bladder was washed out twice daily. Stronger solutions than one per cent. cause too much irritation, and should not be used, although the author recommends the plan of washing the bladder with eight grains, given three times daily. It also produces more favourable results in the treatment of the night-sweats of numerous phthisical cases, while unfavourable after-effects were never noted. (Therapeutic Gazette, March, 1891, p. 205.)

Camphoric Acid in Night Sweats.

Within the last eighteen months Combemale has published the results which he has obtained from the employment of camphoric acid and the tellurate of sodium in the treatment of the night-sweats of phthisis, or those dependent upon some other severe systemic disorder. I have been so frequently misled by the enthusiastic reports of clinical observers both in Germany and France as to the value of some new remedy which they had tried, that I must confess to have taken up camphoric acid with a considerable degree of prejudice against it. I have studied its action very carefully in the wards of St. Agnes's Hospital during the last six weeks, and I am now prepared to most thoroughly endorse everything which Combemale has said about this drug. I believe it to be of greater utility than any of the remedies which have heretofore been generally employed, such as atropine, aromatic sulphuric acid, and sponging with alum or sulphuric acid water, or similar preparations. Altogether I have given it to about ten cases, and in every one of them it has

acted, even if given in moderate dose, most satisfactorily. When we consider that the dose of 20 grains of camphoric acid is only a third of what may be given in cases where this dose fails, namely, 60 grains, it becomes evident that the drug requires a more general trial by the profession, and that it will probably take a prominent place in the list of our materia medica. It is absolutely devoid of taste, insoluble in water, and comes in small micaceous crystals, which are soluble in alcohol. It does not produce the gastric irritation and burning produced by camphor, and in none of the cases in which I have employed it has it ever occasioned any distress or untoward symptoms. As yet I have not had an opportunity to test the therapeutic activity of the tellurate of sodium, and I can say nothing, therefore, in regard to its value. Combemale states that while it is useful in night-sweats it is not equal to camphoric acid in power, and I am so well satisfied with the latter drug that I shall only try the tellurate of sodium when I find a case in which camphoric acid fails. (Dr. H. A. Hare, University of Pennsylvania, Medical News, April 4, 1891, p. 384.)

[Dr. Hare orders twenty grains of camphoric acid to be stirred up in a little milk, or placed on the tongue and washed down with water, one hour before the time at which the sweating generally begins.]

CHLORALAMIDE.

The following summary embodies the results of the observations detailed in a contribution to the study of chloralamide:— (1) The reflex irritability of the spinal cord was diminished; (2) Peripheral sensation was not reduced; (3) On frogs there were hypnotic action, slowed respiratory and cardiac actions, abolition of reflexes, and subsequent recovery of the normal condition; (4) Blood pressure was slowly reduced with large doses; (5) Pulse rate was not affected; (6) Respirations were reduced and finally abolished; (7) The conductivity of motor nerves was destroyed, and was not restored by subsequent washing in salt solution; (8) The irritability of muscle substance was destroyed, and was not restored by subsequent washing in salt solution; (9) The excretion of urea was increased by small doses — 0.3 to 0.6 gramme — but was diminished by large doses—2 to 3 grammes; (10) The excretion of phosphates was diminished with both large and small doses; (11) The excretion of the fluid constituents of the urine was not constantly affected by the smaller doses, but was diminished by the larger doses; (12) Reaction of urine was not influenced; (13) Colour and odour of urine were not affected; (14) No albumen was detected; (15) Action on the skin was negative; (16) Temperature was not affected; (17) Digestion did not

appear to be interfered with; (18) Hypnotic action in the healthy was induced with doses of 1.25 gramme and upwards; (19) In painless insomnia the results were highly reliable; (20) In insomnia with moderate pain the results were fairly reliable; (21) In insomnia with acute pain it was not reliable; (22) The analgesic action was feeble; (23) The hypnotic effect followed usually within half an hour after exhibition; (24) The sleep induced was tranquil and natural, and the awakening free from confusion or depression; (25) No deferred action; (26) No craving for the drug was noticed; (27) The point of tolerance was not readily reached; (28) The doses found most reliable were from 2 to 3 grammes; (29) Giddiness and incoordination and headache sometimes followed administration; (30) In senile insomnia, pulmonary diseases, and hysteria, the results were highly satisfactory. (Dr. Gordon, Aberdeen, British Medical Journal, May 16, 1891, p. 1063.)

Chloralamide.—Prescription for.

Galiana recommends the following prescription when using chloralamide:—℞: Chloralamide 45 grains, dilute hydrochloric acid 5 parts, distilled water 2 ounces, syrup of raspberry 2½ drachms. One-half of this amount may be given. This may be divided into four doses, one of which may be given every four hours. For rectal injection he recommends:—℞: Chloralamide 30 grains, dilute hydrochloric acid 2 drops, distilled water 3 ounces. Or the chloralamide may be dissolved in an infusion of tea to which should be added a considerable quantity of sugar. (Medical News, March 7, 1891, p. 278.)

COCAINE.—The Effects of.

Dr. Edward Falk, of Berlin, has made a study of the effects and dangers of cocaine which has a very practical interest for all medical men, as it is so universally used. There is hardly a substance about which there are so many opinions as about this drug, especially in regard to what is the safe amount to use under the various conditions which prevail in practice; at one time large amounts, up to fifteen grains, are well borne and cause no disturbance; in other cases a fraction of a grain may produce toxic symptoms. The character of the symptoms may also vary widely; it may cause excitement, or in other cases stupour; hallucinations may follow its use; it may induce coma; at times convulsions may be the result, at others paralysis.

Dr. Erich's opinion that cocaine as a local anæsthetic is one of the greatest discoveries of modern medicine is in marked contrast to Dr. Erlenmeyer's verdict, that in its capabilities for harm it is second only to alcohol. The number of those who have experienced the acute ill-effects of cocaine is already large,

but still greater is the number of those unfortunates who have become subjects of its habitual use.

Dr. Falk has collected the details of 176 cases where serious symptoms were produced by the use of cocaine, and among them are ten fatal cases. His tables are too full to be given here. The smallest dose of cocaine which produced toxic symptoms when taken by the *alimentary canal* was two-thirds to nearly one grain (one case). Death followed in one hour after eighteen grains in one case, and in another twenty-two grains caused death in twenty minutes. In one case very serious symptoms followed fifteen grains, though the result was not fatal. From *local application* the amount which will cause poisoning varies with the part with which the drug is brought in contact. The smallest dose which caused alarming symptoms when injected into the *bladder* was fifteen grains, though eighty grains did not cause as serious symptoms in another patient. In the *urethra* the injection of fifteen drops of a 3 per cent. solution (one-third grain) caused very threatening symptoms; in another case, in which twelve grains were injected into the urethra, death followed in twenty minutes. After application to the *uterus* of two grains in one case, and nearly three grains in another patient, toxic symptoms were caused. Applied to the *rectum*, death followed after the use of eighteen grains. After the use of cocaine in the *nasal* cavity, serious poisoning followed only one-fifth of a grain. In the *ear* five drops of a 5 per cent. solution (one-fifth grain) caused marked symptoms. In the *mouth* and *throat* half a grain, three drops of a 20 per cent. solution in a tooth proved sufficient to cause unconsciousness. One-twelfth of a grain under the gum was followed by opisthotonus and irregular breathing. Brushing the *pharynx* with a 4 per cent. solution was sufficient to cause poisoning in several cases. Surprisingly small amounts caused symptoms from absorption through the *conjunctiva*, one-sixteenth of a grain (two drops of a 4 per cent. solution), and in a boy of fourteen one-tenth of a grain, or one drop of a 1 per cent. solution. (Cyanosis of the lips, paleness, profuse sweating, slow, small pulse.) Two-thirds of a grain injected under the conjunctiva in a woman seventy-one years old was followed by death in five hours. As regards the use of the remedy *subcutaneously*, the variation in the effects with the site of the injection is not so obvious as when applications to the various membranes are made. The observations made by Wölfler, in 1889, showed, out of 23 cases of poisoning by cocaine, 19 were about the head, 1 in the larynx, and the remaining 3 were not considered, as an excessive quantity (over two-thirds of a grain) had been used. From the cases reported by Dr. Falk, however, injections about the head are not so much more dangerous than

into other parts. He found 28 cases where these injections were made into the trunk, 9 into the extremities, and 7 into the head. If to these last we add 36 cases where the injections were made into the gums and 5 cases where the injections were made into the conjunctiva, we have a total of 48 injections into the head, to contrast with 37 cases where the injections were not made into that part. The amount injected into the trunk and extremities was not excessive—that is, three grains were exceeded only five times—and in injections about the head this quantity or more was given six times. The smallest amount which caused symptoms in each case was two-thirds of a grain into the trunk, one-sixteenth of a grain into the forearm, and rather more than two-thirds of a grain into the head. From the cases here collected it would seem that we are not justified in considering that the site of the subcutaneous injection affects the possible toxic results. The local use of cocaine varies in its effects with the rapidity of absorption of the membrane to which it is applied. The conjunctiva is a very rapid channel ; after that the order would be nose, larynx, mouth, and ear, in which group up to one-third of a grain in general may be used ; then come the urethra, uterus, and rectum, for which a maximum dose is one and a half to two grains. For the intact bladder fifteen grains may be injected without danger. Old women who are poorly nourished, and youthful patients who are nervous and anæmic, are especially susceptible to the action of cocaine. The local use of cocaine in the eye sometimes causes a cocaine conjunctivitis, characterised by acute swelling and redness of the skin of the eyelids. To avoid the toxic symptoms it is advisable, with anæmic patients, to have them lie down and breathe a few drops of nitrite of amyl. Disease of the heart and blood-vessels, especially atheromatous processes and fatty degeneration of the heart and pernicious anæmia, are contra-indications. The treatment should be warm drinks, sinapisms over heart and stomach, in case of marked vasomotor stimulation, inhalation of amyl nitrite ; for convulsions, chloral hydrate, chloroform, and opium ; if breathing fails, artificial respiration. (The American Journal of Medical Sciences, May, 1891, p. 499.)

COMMODE, THE.—A Substitute for.

I will mention a plan which I have found of very great service either in cases of cardiac disease, in fevers, or in conditions of extreme weakness where the feebleness of the heart made it very advisable that the patient should use as little exertion as possible. It frequently happens that patients strongly object to use a bedpan, and assert, sometimes with a considerable amount of truth, that they are unable to empty the bowels

satisfactorily in the recumbent posture. A great deal of the risk connected with the use of a commode arises from the fact that when they use it they generally have to get out of bed and into it again. In these cases I adopt a plan, which I suppose many others have used also, but which I have never seen described. It is to have a strong platform made of rough wood, of such a height that the commode, when placed upon it, is level with the bed. A large, strong packing box, sawn to the proper height, may answer, or, if this is not at hand, any carpenter can put together a rough but strong construction of the kind needed. If nothing else is at hand, the drawer of a wardrobe turned upside down will do, but it must be supported from below by books or pillows piled up within it, so as to prevent the bottom of it from breaking through, as usually it is not strong enough to support the weight. The commode being pushed close to the bedside, the patient has simply to slew himself round upon it. The body is raised, and the legs are allowed to hang down. After the bowels have been evacuated, he is rolled round on his side into bed. During the whole process no change is ever made in the level of the patient, the only alteration being in the relative position of the trunk and legs with reference to his pelvis. Perhaps some of the new devices for raising the patient bodily from the bed might do better than this, but generally they are not at hand, and the plan which I have mentioned can always be followed, as some kind of platform sufficiently strong to serve the purpose can be made with boards, boxes, or footstools in every house. (Dr. Lauder Brunton's Cavendish Lecture, British Medical Journal, June 20, 1891, p. 1326.)

DIPHTHERIA.—Treatment of.

In a recent number of the *Zeitschrift für klin. Medicin*, Professor Kohts gives his experience in the Strasburg Children's Hospital of the treatment of diphtheria, ranging over a period of ten years. For therapeutic purposes cases may be divided into the membranous and infiltrated forms, septic processes being uninfluenced by any treatment. In all cases an "ice cravat" is laid around the throat, and inhalations of dilute glycerine (1 to 4) used, or one per cent. solution of common salt. Besides this, in the infiltrated form, there may be swabbed over the parts three times daily a five per cent. chinolin solution; and, unless there is croupous deposit, brushing every few minutes or inhalation with a five per cent. papayotin solution suffices to cause the membrane to disappear rapidly. General measures will also require to be adopted, such as, in high fever, cold bathing, wet packs, and strengthening diet. After tracheotomy the question of the removal of the cannula is often very difficult,

and this is seldom possible before the tenth or even the sixteenth day. Nephritis was observed in nearly all cases; it disappeared usually with the diphtheria, having run an acute or subacute course. Two cases with renal symptoms had a fatal termination, which was caused by the obstruction of the kidney tubules by broken-down red blood-cells, consequent on the use of chlorate of potassium. This accident only happens when its excretion is incomplete, a state of matters very liable to occur where the kidneys are so often involved as in this disease. The writer therefore avoids chlorate of potassium internally in diphtheria, and does not prescribe it even as a gargle for children, from the risk of swallowing it. Kohts divides the paralyses sequential to diphtheria into (1) the *early* form, caused by the rigidity of the muscles of deglutition after the disappearance of the membrane, and (2) the *late* variety, showing itself in various regions. Both forms run a favourable course if they are limited to the throat, or involve but slightly the extremities or ocular muscles; if it is progressive, in spite of the use of strychnine injections and electricity, the prognosis is bad. There appears in some families to be a predisposition to the occurrence of diphtheritic paralysis. The results of the post-mortem examinations of patients who had died suddenly during recovery were negative. The affection should be treated by supporting the strength and by tonics. The use of the feeding tube is very difficult, and must often be discontinued from the vomiting it leads to. Nutrient enemata are of no use. The best way is to administer the food in a concentrated form. *Therapeutische Monatshefte*, No. 4, 1891. (The Practitioner, July, 1891, p. 54.)

EMULSIONS.—Condensed Milk for.

Condensed milk is said to be an excellent and economical agent in the preparation of emulsions. The following is given for a fifty per cent. emulsion of cod-liver oil: Cod-liver oil, eight parts; condensed milk, glycerine, or syrup, each three parts; distilled water, two parts. Triturate the condensed milk in a mortar, adding the oil gradually, then add the water and glycerine together with sufficient oil of bitter almonds and essence of wintergreen to mask the taste of the oil. *Druggists' Circular and Chemical Gazette.* (New York Medical Journal, June 6, 1891, p. 653.)

ETHER.—Paralysis after Subcutaneous Injection of.

Eberhart (*Centralblatt für Gynäkologie*, No. 12, 1891) reports the following case, which is of considerable interest to laparotomists, since ether is frequently used hypodermatically as a cardiac stimulant in cases of collapse during abdominal section. In the course of an operation upon the cervix and

perineum Eberhart's patient suddenly collapsed, whereupon two injections of ether were given, one on the anterior, and the other on the posterior aspect of the right forearm. The following day the patient had extensor paralysis of the middle, ring, and little fingers of the right hand, which disappeared in six weeks under faradisation. It was inferred that a branch of the radial had been affected. Similar cases have been reported by Heymann, Mendel, and Remák; the latter attributes the paralysis to the direct irritation of the peripheral nerve by the ether. [We have long held the opinion that ether, although one of the most rapidly-acting cardiac stimulants, is too irritating for hypodermic use, even in emergencies in which it is invariably so employed. Even if paralysis does not result, persistent localised pain, paræsthesia, dermatitis, and abscesses are not infrequent results. We have found that deep injections of camphorated oil (one part to four), as recommended by the writer, were equally efficacious, and much less irritating.—Ed.] (The American Journal of Medical Sciences, July, 1891, p. 103.)

GRAVES'S DISEASE.—Course and Duration of.

As a rule the disease is slow and insidious in its onset, and runs a chronic course lasting over several years; but, as Trousseau pointed out, there is another class of cases which run a very acute course, and terminate rapidly either in recovery or in death. Moore relates the case of a girl who, after reading a letter informing her of the death of her brother, was suddenly seized with all the symptoms of exophthalmic goitre, which, however, passed off completely at the end of two days. That is probably the shortest case on record; and, as far as I know, there is no case which has proved fatal within six weeks of the onset of the symptoms. Many cases which begin with very acute symptoms gradually subside into a chronic stage, and it is very rare, indeed, for death to occur before the end of the first year. It sometimes happens that one or other of the cardinal symptoms may disappear, and the others remain much as before —thus, for example, cases are known in which the exophthalmos was wanting while the tachycardia and the goitre persisted. When the eye symptoms, and those referable to the thyroid gland are strongly developed, the pulse rate very rapid, the tremor well marked, and emaciation actively progressing, the prognosis is necessarily unfavourable, but even in the most unpromising cases, if the patient can be properly cared for, good therapeutic results may be obtained. In many cases of exophthalmic goitre death takes place as a result of some intercurrent disease, and in a few instances has occurred without warning. Hale White states that death took place suddenly in two out of

seven fatal cases, which he had an opportunity of examining, and other cases are mentioned by Mackenzie. The exact cause of death in the latter instances could not be determined on post-mortem examination. In the more chronic cases some heart affection, a cerebral hemorrhage, or some form of tuberculosis are the pathological lesions which have been most frequently found. (Dr. Ramsay, Glasgow Medical Journal, September, 1891, p. 194.)

[See also Dr. Ramsay's article on the treatment of Graves's Disease at p. 183 of this volume of the *Retrospect.*]

Graves's Disease.—The Tremor of.

Charcot was the first to direct attention to this symptom, which, on account of its frequency, he regarded as one of the cardinal features of the disease. It was carefully investigated by Marie, who described it as "a perpetual vibration," and said that, "standing or seated, all the body seemed to be in a continual tremor." Wolfenden says of it that, while in paralysis agitans one can see the tremors at a glance, in exophthalmic goitre it may be necessary to take hold of the patient's hand before the fine vibrations characteristic of the trembling movements can be noticed. In so far as this tremor does not affect the individual digits (Charcot), it differs from the trembling movements which are present in other diseases—*e.g.*, alcoholic tremor, &c. It is always aggravated by muscular fatigue, or under conditions of mental excitement. Thus West tells of a patient who, worn out with nursing her sick children, was seized with trembling so severe that "she could hardly stand"; and Trousseau relates a case in which the patient became so excited that she was unable, on account of trembling, to sign her daughter's marriage contract. The symptom acquires its chief importance from the fact that it is an early manifestation of the disease, and is therefore helpful in the diagnosis of "incomplete" cases. It may be the initial symptom, as in an interesting case related by Mobius, where a woman, after painful moral emotions, suffered from tremor of the left hand resembling paralysis agitans, and soon afterwards all the symptoms of exophthalmic goitre developed. In some cases this tremor amounts to spasmodic movements; at other times the spasm may be so persistent as to resemble tetany, and Mackenzie speaks of painful cramps as a frequent complication. Muscular weakness, "a tendency of the legs to give way at the knees," hemiplegia, paraplegia, contracture of the paralysed limb, and altered cutaneous sensibility have all been observed in aggravated cases. (Dr. Ramsay, Glasgow Medical Journal, September, 1891, p. 186.)

Graves's Disease.—Treatment of.

A treatment which is designed mainly to control the action of the heart, which is perhaps the most uniform symptom present, does not cure the disease. Nor does any measure which is devoted especially to the treatment of the thyroid enlargement control the malady. It has to be treated upon general principles, just such general principles as would be applied to the treatment of any general neurotic affection. In my experience physical rest is a point of very great importance. I do not believe that it is possible to treat these cases with any success without putting them to bed, and I am sure that that is a point of cardinal importance. Where the psychical phenomena are very marked, I think it is very desirable they should be treated as you would treat any melancholic patient; that they should be often sent away from home, and protected from surroundings which frequently aggravate the malady, for they are extremely sensitive to every disturbance. And inasmuch as they often arise from causes which are present in the home, the emotional disturbances which are incident to their surroundings, it is extremely important that they should be separated from them. Next to the treatment by rest, I think that the dietetic treatment is important, for very often these patients suffer from innutrition and require very careful feeding, and this, in counection with passive exercise by massage and manipulations, I believe may often be of great service. In regard to the treatment by drugs, I confess that there is in my experience, as there must have been in the experience of most of the members, a very large degree of dissatisfaction. I think that the use of cardiac tonics is often very beneficial. The one from which I have derived most satisfaction, I think, is digitalis and the class of cardiac tonics to which digitalis belongs. I have used aconite in the form of the tincture and in the form of the active principle, aconitia, but have not had very good success with it. I think it is inferior as a heart tonic in these cases to digitalis. I have not had any experience with spartein, nor have I used strophanthus in these cases. A remedy from which I have in some instances seen most beneficial results, and I have used it on the principle that it influenced markedly the heart's action, is iodide of potassium. (Dr. W. H. Draper, at the Practitioners' Society of New York, on April 3, 1891. Medical Record, July 11, 1891, p. 52.)

IODOFORM POISONING.

The following conclusions are appended to an interesting paper by Dr. Rudolf Gerlach, of Philadelphia—1. Iodoform-toxæmia, after external application to wounds or ulcerating surfaces, manifests itself in one or more of the following clinical forms,

viz.: lesions of the skin and subcutaneous tissue, gastro-intestinal irritation and disturbances of the nervous system, either psychical, thermal, or cardiac in their manifestations. 2.—Very small doses do not lead to grave intoxication, though even the most trifling doses may produce annoying skin symptoms. 3.—The uticaria-like eruptions or eczematous or simple dermatitis with profuse serous discharge resemble each other in their distribution. 4.—All forms of iodoform-poisoning have the common features of rapid development and slow disappearance. 5.—In none of the cases was the repair of the wound impaired, but, on the contrary, in some rapid improvement was striking. 6.—Some apparently normal individuals are by idiosyncrasy predisposed to iodoform-toxæmia. 7.—The fatal cases so far reported show that tuberculous, scrofulous, or cachectic individuals are most exposed to danger, a fact which is well illustrated by the writer's third case of iodoform-poisoning, which occurred after chronic suppuration, while large quantities of iodoform had been used with immunity before the existence of the latter. 8.—These clinical facts seem to harmonize with de Ruyter's experimental results, according to which the danger of iodoform-poisoning depends on the presence of organic fluids and ptomaïnes on absorbing surfaces, under the action of which albuminates of iodine are formed, which are subsequently absorbed. 9.—The danger of poisoning also depends in large part upon the form of application, that by ethereal solution having proved most virulent, and also, it seems, upon the locality to which it is applied and the extent of denuded surface. 10.—Though iodoform is extensively used in specific inflammations, no case of iodoform-poisoning belonging to this group is reported, and therefore it seems not unlikely that immunity exists in syphilitic individuals. (Medical News, March 7, 1891, p. 276.)

MORPHIA HABIT.—Treated by the Gradual Method.

Dr. Cottel, of Portland, Oregon, in the *American Practitioner*, states that he has obtained a positive cure in forty cases of morphine addiction by means of the following "mistura diabolica": Morphine sulphate, a variable amount; fluid extract of viburnum prunifolium, four drachms; elixir of ammonium valerianate, three ounces; elixir of sodium bromide, two ounces and a half. The dose is a teaspoonful as required. The amount of morphine is a diminishing one, beginning at a point somewhat below that which has been taken habitually. Tincture of opium may be substituted for the morphine with advantage in some cases, the size of the dose being proportionately increased. The bromide of sodium is in the proportion of five grains in each drachm of the excipient. The mixture can be readily

given up after the morphine is dropped from it. This plan of treatment involves the gradual withdrawal of the narcotic in cases where there is a *bona-fide* desire to be cured; immediate withdrawal is cruel and unscientific, and it is inapplicable where espionage and restraint are not within reach. Rapid withdrawal of the narcotic has the same objections, and the tendency to relapse is greater than when the gradual weaning has been resorted to. The writer adds: "I am confident that no case is incurable, however chronic, provided the general health is fair." The main point will be to win the confidence of the patient in the physician's power to cure, and to secure this he is to be taught that the substitute used by the physician contains no morphine. If he finds that the substitute contains morphine his co-operation will not be given, since nearly all opium-fiends have had a sad and fruitless experience in regard to the tapering-off process. It is well not to hurry the reduction of the dose of morphine; in chronic cases, or those of persons who have been taking ten grains or less daily, the patients will usually not notice the abstraction of a grain each week, although some must be dealt with even more patiently than that. In smell and taste this mixture is truly diabolic, and many patients will say they can do without the horrible stuff long before the time estimated as required for the withdrawal has been consumed. (New York Medical Journal, March 7, 1891, p. 276.)

PURPURA.

The author agrees with Henoch in thinking that purpura rheumatica is a disease distinct both from purpura simplex and purpura hemorrhagica. In purpura simplex the bleedings are confined to the skin; in purpura hemorrhagica they affect skin and mucous membranes; in purpura rheumatica, in addition to the appearances of purpura simplex, there are joint affections, disturbances of the intestines, vomiting, colic, and bleedings from the internal organs, especially the kidneys. In purpura hemorrhagica there is often severe epistaxis, but no bleeding from stomach or intestines, and no pain or swelling of the joints. The disease runs its course without fever, and all the cases observed by the author recovered. Purpura rheumatica was strikingly associated with gushes of hemorrhage, which came on after intervals of perfect health. It was attended either by pain and swelling of the joints, or by hæmatemesis, melæna, colicky pains, and vomiting, or by the two forms combined. This combined form was the most severe, and often ended fatally. Purpura hemorrhagica depends on an alteration of the blood; purpura rheumatica on embolisms.—Prof. Th. v. Dusch, *Deutsch. Med. Woch.*, No. 45, 1889. (Edinburgh Journal, May, 1891, p. 1065.)

PYOKTANIN.

Dr. O. Wanscher refers to Professor Stilling's paper, in which the latter called attention to the antiseptic properties of the aniline dyes and named them pyoktanin, from their pus-killing properties. Experiments with the aniline dyes are now justifiable, for Merck has produced a non-poisonous aniline which can be given in doses of 15 grains to dogs, with no result other than to stain their fæces blue. Wanscher confirms Stilling's statements regarding the pus-destroying properties of pyoktanin, but he is not certain that the good result following its use in two cases each of iritis and of choroiditis are to be ascribed to the antiphlogistic power of the pyoktanin. On the other hand, Carl and Braunschweig have disputed its antiphlogistic power, and also claim that it caused severe pain, shooting into the brow and the temple, and that great irritation with croupous exudate occurred upon the ocular conjunctiva after its use. Wanscher thinks these statements unjustified. He has found in a one per cent. solution of blue pyoktanin (methyl violet) an agent which fulfils the desire expressed by Billroth for a stain which will find and destroy its own peculiar bacteria without injuring the tissues. The results of Carl and Braunschweig he attributes in part to improper use of the stain. The pyoktanin, to be effective, must seek out the bacteria in the tissues ; hence, it must be dissolved, clear, and easily absorbed. The more granular it is the more difficult will absorption be. Moreover, the application must be so made that no danger is incurred of transferring any pyoktanin from one patient to another, which can easily happen if the same brush is used for several patients. Pyoktanin in a half-dried condition destroys the bacteria of pus, but not those of croup and diphtheria. Possibly the semi-dried mass is irritating, just as powdered chlorate of potash acts as an escharotic, while a concentrated solution has no such action. Again, the pyoktanin must be employed repeatedly until the tissues are effectually stained. To this end ten or twenty drops at a sitting are often necessary, and they must be instilled every two or three hours, according to circumstances. Carl discards it as ineffective because he did not succeed in checking a serpiginous ulcer by using one drop a day. For six weeks, Wanscher says he instilled pyoktanin (blue and yellow) in nearly every case that applied. Fifty patients received upwards of a thousand instillations. About twenty patients came daily to his clinic, instillations being employed generally four times a day ; altogether there were three hundred instillations a day. He says in no case did he see irritation follow. None of his patients have complained of pain ; and, on the other hand, he says he has undoubtedly rescued three eyes which would have

been lost through gonorrhœa, and two others have recovered from it with full vision. Braunschweig has treated seventy patients with pyoktanin in two months, but it was not employed in a case of gonorrhœa. Wanscher reports his four cases in detail. Besides the cases of gonorrhœa, he has treated by instillation of a one per cent. solution of pyoktanin two cases of cataract operation, four iridectomies, one squint operation, one case of gonorrhœa of the lachrymal sac, two cases of specific choroiditis, one of simple iritis, two of suppurative conjunctivitis, superficial keratitis, &c. The result in these and in other eye and surgical cases in private practice has confirmed his good opinion of pyoktanin, especially of the blue pyoktanin. In his private practice he says he has cured a gonorrhœa of the lachrymal sac which had persisted a year under other methods of treatment, even including galvanic stimulation of the mucous membrane of the canal. He has also employed it in the dressing after operation of a case of osteitis and necrosis of the tibia which had lasted twenty-five years. The result was favourable, and no irritation was produced. A walking case of gonorrhœa, associated with great dysuria, was abated with a one per cent. solution of pyoktanin. The same result was obtained in a case of balano-posthitis. A good result was also obtained in a case of ingrowing nail and inflamed corn. After operation a bandage soaked in a one per cent. solution was applied. The wound healed in a few days, notwithstanding the fact that the patient continued to go about. Wanscher finds yellow pyoktanin less active than the blue. The colour disappears quickly when used upon the eye, but more slowly when used upon the skin. Alcohol quickly dissolves the fresh stain. In conclusion, he speaks of a one per cent. solution of blue pyoktanin as one of the most valuable of our therapeutic remedies for use in purulent ophthalmia. *Therapeutische Monatshefte*, Feb., 1891. (Medical News, April 25, 1891, p. 470.)

RHEUMATIC ARTHRITIS CHRONICA.—Its relations.

To my mind the position is this: Osteo-arthritis is a manifestation of the rheumatic habit of body, an outcome of it, or an arthritic cachexia. Acute rheumatism may precede its onset, sometimes many years previously. The relation to true gout is quite indirect, though the same diathetic basis exists, and gout may come out in the same individual under suitable provocation. There is no antagonism between true rheumatism and osteo-arthritis, and none between it and true gout. Blending of gout may occur, but as a matter of fact seldom does so with osteo-arthritis. That habits of life, especially dietetic habits, have

much to do in determining which mode of evolution shall occur, is, I think, well-proved by the fact that many of the Irish lower orders, who, in their own country and with their special environments, commonly develop chronic rheumatic arthritis, become, in both sexes, under the climatic and dietetic influences of English life, especially in cities, the subjects of unequivocal gout with considerable frequency. A careful study alone of the minute clinical features of each case of arthritis enables an exact and worthy opinion to be formed as to the rheumatic, rheumatoid, or gouty nature of it, and in all cases a full consideration of the phenomena appears to justify the view that many of the clinical features are dependent on, and greatly dominated by, a morbid condition of some of the great nerve-centres which regulate trophic influences upon joints. With a due regard to this part of its pathogeny, many of the characteristic features of the disease receive explanation, and no less are there to be derived from it helpful indications in the direction of therapeutics. (Sir Dyce Duckworth, Liverpool Medico-Chirurgical Journal, July, 1891, p. 252.)

RICKETS, DEBILITY, AND ANÆMIA. — Drug Treatment in.

One of the most universal mistakes, although, perhaps, not one of the most serious, is that of relying largely or chiefly upon drugs in the treatment of these diseases of defective nutrition. Children are apt to be dosed with cod-liver oil and preparations of iron and phosphates indiscriminately, without regard to the condition of their digestive functions, and their fitness for the reception of these materials at the moment. Thus, a delicate child, with feeble appetite, is drenched with cod-liver oil and syrup of phosphates because it is flabby, ill-nourished, and anæmic. The tongue is coated, the bowels confined. The child is, perhaps, over-fed already by rich foods. The chief cause of the anæmia and defective nutrition, and want of appetite, is the disordered state of the functions of digestion, absorption, and fæcal excretion. A few doses of calomel, or grey powder, followed by a tonic, with some saline laxative and judicious feeding, will do far more to remedy the anæmia and debility than cod-liver oil and syrups of iron. These are excellent remedies in their proper place; but, in these conditions of disordered function, they do more harm than good. They intensify the digestive difficulty, and take away appetite. When the disorder is rectified they may find their place again. This habit of giving syrup of phosphates, or cod-liver oil, or both indiscriminately, whenever a child looks pale, or seems languid, or deficient in flesh, has spread from medical men to the mothers and nurses; so that these drugs

have become almost regular articles of diet in many families, to the detriment rather than advantage of health. In the case of rickets, again, far too much reliance is placed upon treatment by drugs. Rickets is a diet disease—at any rate, in the main. Milk or cream, raw meat juice, sunlight and fresh air, are better medicines than any to be found in the Pharmacopœia. (Dr. W. B. Cheadle, Common Errors and Fallacies in the Treatment of Children, Practitioner, July, 1891, p. 15.)

Rickets.—Treatment of.

Bearing it in mind that rickets is mainly a food disorder, it will be apparent that the first thing necessitating attention is the rectification of the dietary. It is this food correction that is of primary importance, and drugs occupy quite a subsidiary position. A close inquiry into the feeding of the infant will, in nearly all cases, show that there is a flagrant abuse of the starchy foods, or that the milk supply is unreliable. It will be found, as a consequence, that there is a deficiency of the animal fat, the animal proteid, and the salts; and these must necessarily be supplied to meet the natural requirements of the rapidly developing frame. Raw meat juice, or raw meat pulp, is one of the most valuable remedies at our command. The milk, also, must be rich enough to contain the full amount of cream, or else it will be necessary to add an extra quantity of the latter to make up the required amount of animal fat. Thus, beyond referring to the general principles involved in the treatment, no more can be said at present, but on some future occasion a full consideration of this most important matter by the writer will, I trust, be forthcoming. (Dr. Muskett, Australasian Medical Gazette, July, 1891, p. 290.)

SALICYL-SULPHONIC ACID.—A Test for Proteids in Urine.

The method of testing for proteids by salicyl-sulphonic acid may be briefly stated. Take a small amount of urine (for example, 20 minims), preferably in a very small test-tube, and add a drop or two of a *saturated* watery solution of the reagent. If the urine is strongly alkaline, an extra drop or two of the acid should be added, and if no opalescence or precipitate occurs it is well to test the reaction with litmus paper, and make sure that the urine has been rendered strongly acid. On adding the reagent, shake the tube quickly so as to mix its contents. Then examine at once. The occurrence of an opalescence or cloudiness *immediately, or within a very few seconds* (for example, 2 to 3 seconds), is a test for proteids intermediate in delicacy between the cold nitric acid test on the one hand, and the acetic acid and heat test (in favourable circumstances) on the other.

The development of an opalescence some time after (for example, ½ to 2 minutes), is a more delicate test than even acetic acid and heat, and shows the presence of minute traces of proteid, which are probably insignificant from a clinical point of view as a rule. Next heat the tube to the boiling point. If the precipitate or opalescence is caused by the ordinary "albumin" (albumin and globulin) commonly present in albuminous urine, it does not disappear on heating, but, on the other hand becomes markedly flacculent. But if the precipitate or opalescence is due to the presence of albumoses or peptones, it clears up on heating (before the boiling point is reached) and reappears when the tube cools. (Professor Macwilliam, British Medical Journal, April 18, 1891, p. 837.)

SCARLET FEVER.—Adenitis in.

In 1,008 cases of scarlet fever admitted into the South-Western Fever Hospital during the year 1890, adenitis occurred in 69 cases, and was the next in order of frequency. The adenitis here alluded to is a distinct affection, and does not include the glandular swelling directly associated with the faucial inflammation, which, though in some instances so slight as to be hardly noticeable, in others assumes such proportions as to deserve the name "bull neck," a symptom of the gravest omen, being associated with extensive ulceration of the fauces, a fetid discharge from mouth and nose, and symptoms of a pyæmic type. The affection to which I refer is a rapid swelling of one or more of the glands of the neck, usually at the angle of the jaw, sometimes beneath the sternomastoid, attended with a fresh rise of temperature, quite apart from the original febrile attack, from which it may be separated by an interval of from one to three or more weeks. It either more or less rapidly resolves, or it suppurates, often with little or no reddening of skin or periadenitis. Of the 69 cases, 17, or about one-third, suppurated, necessitating surgical interference. I have been unable to establish any direct connection between albuminuria and the occurrence of this affection, either simple or suppurative. The large majority of the cases had no albuminuria, though albuminuria was relatively more common in patients suffering from adenitis. Cases of gland swelling with inflammation of the ear passages are excluded from this category as being due to an obvious primary cause, so too those dependent on eczema or pediculi capitis. It has always been to me a matter of surprise that this apparently primary pyrexial adenitis of late development should have escaped recognition in the text-books, or, at any rate, should not have been dissociated from the early affection, which is, as it were, part and parcel of the disease. As regards the incidence of this complication, no determining

cause in the individual was apparent, no connection with age, sex, diet, or locality. Patients who were still in bed, however, as was the case with albuminuria, were certainly more frequently affected than those who were getting up. This is probably explained by the fact that the complication is more frequent in early convalescence ; it occurred more often in the first week than the second, and the second than the third week after the fever had subsided. The fact, however, that in some instances coincidence in time of the attack was noted, though the cases were distributed in different parts of the hospital, would seem to point to some wide-spread influence as the exciting cause, such as an atmospheric or ground condition. The influence of cold, however, was clearly negatived. In this respect also it showed an analogy with albuminuria. (Dr. F. Foord Caiger, The Lancet, June 6, 1891, p. 1251.)

Scarlet Fever.—Ulcerative Stomatitis.

In the same series ulcerative stomatitis occurred in twenty-seven cases. They varied in severity from the mildest form of surface ulceration on the lips, tongue, and buccal surface of cheek, arising in connection with spongy gums and carious teeth, to a rapidly necrotic form of deep ulceration, attended with extensive sloughing of cheek and gum. In this latter form the teeth soon become loose and fall out. Cases of all degrees of severity are attended with a distinctive fetor of breath, a dirty-coated tongue, and rapid incrustation of the teeth with a black putrefactive deposit. The temperature in such cases may be raised several degrees ; in others, the patient being usually of an ill-nourished type, the temperature may be unaffected or even subnormal. Only three of these cases were of sufficient gravity to deserve the name of "noma." Under suitable treatment, and, in the severe cases, very radical treatment, all recovered. I have had to do with several hundreds of such cases, some of a very bad type, and am convinced that if taken early the disease may be stopped. Half-measures are of no use. If the disease does not almost at once yield to mild measures, fuming nitric acid, if necessary under chloroform, should be freely applied to the whole of the diseased surface. Within thirty-six hours the whole process will have changed. Instead of a foul sloughing surface with great fetor, there will be produced a healthy ulceration, quite free from odour, which will rapidly heal, with great improvement of the general condition. If neglected for even a few hours irreparable mischief may ensue. A second application of the nitric acid may be required should any part of the surface have escaped destruction. The affection is contagious, and great care is necessary that any cup, feeder, or spoon, &c., used

by the patient should be reserved for him alone. Convalescents from measles are also subject to this affection, but it is chiefly in children who have recently been run down by one disease and then take another that it is most frequently seen. I have never seen it in an adult or in a child over ten years of age. The disease is probably associated with the presence of some specific micro-organism, but the isolation of any such entity has, owing to the crowds of various organisms present in the mouth in such cases, been hitherto unattended with success. (Ibid., June 13, 1891, p. 1304.)

TYPHOID FEVER.—Diet in.

The typhoid fever patient in the acute stage of the fever can absorb scarcely any food by the stomach ; nearly all his digestion is intestinal, and that also is certainly gravely impaired. Sir William Roberts has called attention to this. "In the seriously sick," he says, "the stomach becomes often inoperative, and digestion becomes almost exclusively intestinal. In the febrile sick the stomach loses its normal office, and becomes merely a conduit to pass on the liquid food to the duodenum." Sir William Jenner has expressed his disapproval of the large quantities of milk that are often given to typhoid fever patients to their great detriment, and he has urged upon practitioners the importance of looking for the presence of undigested curd of milk in the stools, and to take warning by its appearance of the mistake they are committing. Excess of zeal in feeding fever patients is, I maintain, responsible for much of the intestinal trouble that complicates these cases. Strong beef-tea, milk, port wine, brandy, and beaten-up eggs are given the patient in rapid succession, and they accumulate in his intestinal canal, and form a fermenting mixture, out of which poisonous ptomaines may be formed ; while pure cold water, one of the best of eliminators and antiseptics, is often withheld from the patient. Is it to be wondered at that tympanites and painful flatulent distension of the bowels frequently arise after such feeding? I read of practitioners passing a long tube into the bowel three times a day for the purpose of removing "flatulent distension and foul fæcal accumulations"—accumulations that never ought to have accumulated ! In feeding a typhoid fever case you should be guided by a careful observation of the digestive and absorptive capacity still retained by the patient, and you should remember that no good, but harm, is done by giving the patient more food than he absorbs. It must be especially remembered that excellent as milk is as a food, it is a *concentrated* food apt to coagulate into *indigestible curd* on encountering any acid secretions in the stomach or intestines. It should therefore never be given *undiluted* to a fever patient,

and it should be made distinctly alkaline, so that it may not form an irritative coagulum when it reaches the stomach, but pass on in the fluid form into the duodenum. For this purpose Vichy water is a good diluent of milk, but a less expensive and very convenient method is to add to each cup of milk and water (half milk and half water) an alkaline tabloid composed of bicarbonate of soda, bicarbonate of potash, carbonate of magnesia (each two grains), and common salt, three grains. This will not only assist the digestion of the milk, but it will add certain necessary salts to the food, which from the absence of vegetable foods the patient does not get. Common salt is also an excellent antiseptic. Let me also protest against the common practice of giving very strong beef-tea to fever patients ; it has always seemed to me that the too ordinary practice of giving concentrated beef-tea and sweet port wine to a fever patient was precisely the best means of setting up troublesome septic changes in the intestinal canal. And why this desire to give these very concentrated beef extracts ? Everyone with any right to speak with authority on this matter has urged the importance of the free administration of water to carry off the products of metamorphosis, as an eliminant and antiseptic. Why not give some of this water in the form of light, clear soups and broths—far more grateful to the fever patient than strong beef-tea, to which they soon take a great aversion. I am not speaking against meat soups and meat juices—I have argued elsewhere in their favour—but I am enforcing their rational use and their rational preparation. The clear, light, clean-tasting, nicely-flavoured *consommé*—flavoured with fresh vegetables and savoury herbs that every first-rate cook serves at the commencement of a good dinner—is the kind of food for a fever patient. But I will not pursue this part of the subject further, as I have elsewhere fully discussed the principles that should guide us in the feeding of acute diseases ; I will only repeat the recommendation to limit the food of the fever patient to that which he is able to absorb. (Dr. Burney Yeo, The Lancet, April 18, 1891, p. 867.)

Typhoid Fever.—Quinine in.

Many physicians still prescribe quinine in typhoid fever by giving 15 to 30 grains in four doses, to be taken during the day. In this manner no therapeutical result is obtained, because it is seldom that a reduction of temperature follows. Although, according to Dr. Manassein's observations, quinine is retained longer in the system of a fever patient than in health, it is a well-known fact that quinine begins to be eliminated by the kidneys after ten minutes, that after twelve hours the whole dose is secreted and eliminated, and that elimination is greatest

after six hours from the time the drug is taken. Therefore, small doses cannot have any effect. In typhoid fever it is advisable to give large doses at short intervals, viz., 20 to 30 grains in one hour. To overcome the pyrexia it is necessary to administer the drug six or eight hours before the rise of temperature, viz., 8 to 15 grains at ten o'clock and 15 grains at eleven o'clock in the morning.

Dr. Huchard found the combination of quinine and antipyrine very useful in the following proportion: hydrobromate of quinine and antipyrine of each 75 grains; to be divided into ten doses, two doses to be taken during the day.—*Centralblatt f. Gesammte Therapie*, Heft v., 1890. (The American Journal of Medical Sciences, April, 1891, p. 402.)

Typhoid Fever.—The Internal Use of Water in.

Beaumetz regards the promotion of abundant diuresis as one of the elements of success which ought always predominantly to enter into our therapeutics of typhoid fever. He believes that it is useful to favour as much as possible the elimination of the products of organic disintegration. With this object in view it is necessary to give our patients abundant drinks to favour diuresis. As Dr. A. H. Smith, in another and very different connection, says so wisely we are apt in these cases to give freely of albuminous substances, and too often the instinctive craving for simple water to dilute the blood and facilitate its passage through the lungs is met by the constant proffer of milk, beef-tea, etc., in which the water is spoiled for nature's purpose by the addition of unnecessary food. He would have added, doubtless, in typhoid cases that the craving for simple water is to wash out the kidneys, and thus prevent intoxication from retention of the waste of nitrogenous tissues, and to evaporate from the lungs and skin, and thus regulate the abnormal temperature of the body. On taking charge of my hospital wards at St. Luke's last autumn, I determined to treat my typhoid cases, tentatively at least, with cold water internally. Subsequently this treatment was carefully employed in three cases, apparently of moderate severity. These cases all did well. There was scarcely an untoward symptom. I experienced no difficulty in giving each of them four to six ounces of water every two hours in addition to the three or four pints of milk, that they were taking daily. This amount of fluid caused no disturbance whatever, not even a slight dyspeptic attack, and the patients took it without a murmur. The amount of urine was notably increased in each case and its specific gravity lowered, as I had a right to infer. These patients gradually recovered their strength and health, and the convalescent period continued most satisfactorily. In a fourth case, begun after

this method, I felt obliged to supplement the internal use of cold water by cold baths after Brand's method. This case was one of particular severity. He ultimately recovered, and, so far as I could determine, was benefited by the cold baths. In making the foregoing plea for the internal use of water in treating typhoid patients I do so in the belief that we will thus be carrying out nature's prescription. I do not say that it will prove as efficacious as the method of Brand, but I am hopeful that it may. At all events, it may properly supplement it, and it will have two very great advantages, *i.e.*, it can cause no harm, and is perfectly simple and easy of trial. (Dr. Beverley Robinson, New York, Medical Record, July 4, 1891, p. 11.

Typhoid Fever.—Treatment of.

[In an analysis of 105 cases of Enteric Fever treated in the Station Hospital, Alexandria, in 1890, Brigade-Surgeon Albert A. Gore, M.D., makes the following remarks upon treatment :] All modern experience is tending towards the value of a complete antipyretic course, and the administration of such drugs as will at the onset of the disease inhibit the development of the pathogenic microbes so far that the disease may be aborted, and that at any period over-production of the chemical toxins may be prevented, and the fever made to run a mild course. The quantity of milk should not exceed two and a half pints—in cases of hemorrhage should be prohibited absolutely, and Brand's essence substituted, or raw meat juice. Over-stimulation in the early stage is most injurious ; many cases do well without any intoxicant. Barley-water is probably the best of the diet drinks ; whey is also good. There was always abundance of ice, and most skilful nursing. I have never seen a case of perforation recover, but some bad cases of hemorrhage have done well under the following treatment—viz., absolute rest, Brand's essence, a large ice-bag to the abdomen, ergotin, opium ; when the pulse becomes accelerated, digitalis, aconite ; later, raw beef juice well on into convalescence ; a sheet thrown across the body and a blanket over the feet. Smothering up patients in typhoid with blankets should be avoided. Yet how often is it done ! (Dublin Medical Journal, August, 1891, p. 115.)

WHOOPING COUGH.—Treatment of.

In a lecture delivered at the Hospital for Sick Children, Paris, Jules Simon (*Journal de Médicine*, 1890, p. 577) remarks that the treatment of the first period is of great importance, for the future progress of the case depends upon the care which is given to it at that time. One must be well convinced, contrary to the method which was followed formerly, of the necessity of keeping the child indoors ; it is often even necessary to keep

him in bed as one would do for a serious attack of bronchitis. Archambault has insisted upon the importance of this fact, and since Simon has adopted the same plan he has observed almost no complications in whooping cough in children who were cared for in time. The pharmaceutical means are not to be neglected, but at best are only secondary ; belladonna is, perhaps, the best of all. It is well to employ the following formula :—Tincture of aconite root, tincture of belladonna, elixir of paregoric, equal parts—ten, twenty, or thirty drops a day, according to the age of the patient ; if there is fever increase the aconite, or if intestinal catarrh increase the paregoric. Chloral may be given in the evening, and sulphate of quinine in the morning. These drugs may be used by injection, the former in 15-grain doses, and the sulphate of quinine in three- to five-grain doses, especially if the heart is agitated. We must combat the catarrhal secretions if they are too abundant ; under these circumstances an emetic may be given once a week ; with the infusion of wild narcissus (daffodil) given every two or three days one obtains a state of mild nausea which favours the expulsion of the secretions ; rhatany will also diminish them, of this we may give from three to five grains of the extract before each meal. Coffee is advised, to combat the dyspepsia. The treatment for the third period is that directed to the bronchial adenopathy ; it consists principally in the use of tonics, iodine, cod-liver oil, &c., and later, an outdoor life. To the remedies referred to above one may add with advantage, in certain cases, henbane, to combat the meteorism, in doses of from two to ten grains a day, warm friction of the abdomen with chamomile oil, containing tincture of nux vomica, 4 parts to 100, combined with digitalis when there is anuria, a thing that often happens. (American Journal of Medical Sciences, May, 1891, p. 544.)

AFFECTIONS OF THE NERVOUS SYSTEM.

AMPUTATION OF THE LEG IN ADVANCED LOCOMOTOR ATAXY.

I have recently had an opportunity for observing the process of repair after amputation in a state of advanced locomotor ataxy. It may be of interest to record the result, since, owing to absence of any experience on the point, I felt some misgivings in recommending the measure. The patient was a gentleman of middle age, who had been under my observation for ataxy with perforating ulcer of the sole of the foot for upwards of ten years. The ulcer in one foot had extended to the bones of the metatarsus, and from time to time portions had been removed until the foot had become much shortened. At length

suppuration in the ankle joint occurred, and the limb was not only disabled, but had become, not merely an incumbrance, but a cause of failure in general health. The leg was extremely emaciated, being little more than skin and bone. The amputation was done through the middle of the leg, and the only peculiarity encountered in its performance was the extreme condensation of the bone. The medullary cavity, both in tibia and fibula, was nearly obliterated, and the bones were exceedingly hard. No trouble was encountered with the arteries, which were either tied with catgut or twisted. The amputation was by Teale's method. Under an antiseptic dressing the edges of the skin everywhere united well by first intention. About the tenth day, however, the stump became hot and throbbing, and an abscess formed which it was necessary to open in the middle of the face of the stump, and from which a quantity of exceedingly thick, flaky pus was discharged. I much feared that this denoted that the end of the indurated bone had not united to the soft parts, and would undergo exfoliation. Such, however, was not the case, for in the course of a week or two, under the use of syringing, the abscess healed, and the stump became quite sound. The patient has since regained his health so far as the advanced ataxy permits. He has been fitted with an artificial leg, and his stump bears pressure well. The result of the amputation has therefore been highly satisfactory. (Mr. Hutchinson's Outlines of Surgery, October, 1891, p. 137.)

ATROPHIC SPINAL PARALYSIS AND MULTIPLE NEURITIS.

At the Clinical Society of London, on March 15th, 1891, Dr. Gowers read an account of a case of Acute Atrophic Paralysis (acute anterior poliomyelitis), in which there was also a primary multiple neuritis. The patient was a boy aged seven, in whom the paralysis developed after several days of constitutional disturbance. The first symptoms of this commenced within twenty-four hours of a quite cold bath, to which he was unaccustomed. The weather at the time was very hot. The atrophic paralysis involved the whole left arm and shoulder muscles and the right deltoid, triceps and biceps. At the end of a fortnight these muscles, and all those of the left arm, presented the reaction of degeneration, and their paralysis and wasting proved permanent. Simultaneously with their palsy, the legs became weak, although all movements could be performed. The knee-jerks were preserved throughout, and when the palsy had existed for a week they had become excessive, and a foot clonus had developed on each side. This continued for some months, although the legs gradually regained power; so that the child was able to walk in two

months from the onset, and the legs ultimately became quite strong. The symptoms thus showed cervical anterior poliomyelitis extensive and severe on the left side, and on both sides involving slightly the adjacent white substance, so as even to cause some secondary descending degeneration in the pyramidal fibres, transient, and due to damage that passed away. The interest of the case, however, rested in the indications of neuritis. Even before the palsy was discovered the arms and legs became extremely tender, chiefly in the neighbourhood of the elbow-joints and knee-joints, and thought to be in them, because every movement and manipulation of the joints caused great pain. Careful examination showed, however, that it was entirely in the nerves—in the sciatic and popliteal nerves of the legs, and the ulnar and median especially in the arms. The tenderness lessened upwards and downwards, and was much slighter at the brachial plexus. The nerves of the left arm were more tender than those of the right. There was no anæsthesia or other evidence of damage to the conducting fibres of the nerves. These symptoms lessened in the course of a few weeks, and passed away entirely, although the atrophic palsy persisted in almost its initial degree. They were certainly due to a multiple perineuritis, affecting the nerves in the middle of their course, primary and developing simultaneously with the spinal lesion in consequence of the same cause. In commenting on the case, Dr. Gowers remarked on the probability that the pain and tenderness met with in other cases of poliomyelitis, and usually referred to the joints, was really seated in the nerves, which suffer mechanical disturbance at every movement of the joints. Although poliomyelitis was probably produced through the agency of a blood state, the latter was certainly often generated by exposure to cold, and effective chiefly in the hot season of the year, which in some way predispose either to the susceptibility of the individual or to the production of a toxic influence. Exposure to cold was capable also of causing the other and more common form of multiple neuritis, the parenchymatous variety, in which the nerve fibres suffered primarily, the sheaths scarcely or not at all, except in their nerves, and the incidence of the effect was peripheral and more perfectly symmetrical. A difference must exist in the blood state due to cold in the two classes of neuritis, and it was important to note the associations of the two forms thus produced. In this connection the author referred to the leading features of the two forms of neuritis, the parenchymatous and the adventitial, using the latter term as a designation for the variety in which the connective tissue elements were primarily affected. Recent researches were referred to which suggested that there were two varieties of

poliomyelitis, the primary affection in one being of the nerve cells, in the other the basis substance of the grey matter, the former being analogous to the parenchymatous, the latter to the adventitial forms of neuritis, and reasons were given for regarding the poliomyelitis in the case described as of the second class. The paper concluded with an allusion to the probability that an actual organised virus sometimes produced the adventitial form of neuritis by the direct influence of the organisms on the connective tissue elements, and especially on the sheath, as was seen in leprosy, and might be the case in syphilis; while, on the other hand, the parenchymatous form was certainly often due to a product which the organisms produced by their growth in the body, as one active agent, alcohol, was produced out of the body. The question was suggested, as deserving study in this connection, whether diphtheritic neuritis commencing during the primary disease was not chiefly adventitial, and that which began when the disease was over in greater degree parenchymatous, and the contrast was noted between the adventitial neuritis of the active stage of syphilis and the parenchymatous later form which often constituted part of the lesion of tabes. (The Lancet, March 21, 1891, p. 662.)

BELL'S PALSY.—Pathology of.

Professor Minkowski, of Strasburg, has made an important contribution to this subject. Cases of Bell's paralysis are common enough, but it is not often that an opportunity occurs of examining the abnormal nerve. The clinical history of the case was the usual one. The attack came on after exposure to cold, and when the patient was last seen there was well-marked reaction of degeneration, but there were indications of commencing return of voluntary power. The patient died by misadventure, and the result of the examination of the nerve is somewhat surprising. There was no difficulty in removing the nerve, no appearance of inflammatory compression in the bony canal, and the nerve coverings were quite normal in appearance. In the peripheral branches of the nerve nearly all the fibres examined were in an advanced stage of degeneration. Here and there were newly-formed nerve fibres and others in process of regeneration. In the other branches besides those degenerated fibres were numerous well-formed normal fibres. Above the nerve to the stapedius the number of degenerated fibres gradually decreased, and at the geniculate ganglion the degeneration ceased entirely. In the superficial petrosal there were only isolated degenerated fibres, and this was the case in the nerve to the stapedius. No change was found in the fibres of this muscle. It will thus be seen that there was present no evidence

of inflammatory action. The appearances seem rather to point to a change starting from the periphery, and the author suggests that this may be of the nature of a degenerative neuritis, the direct result of cold. (Ibid., August 1, 1891, p. 242.)

CEREBRAL PALSIES IN INFANTS.

Professor Sachs, in a paper read before the New York Neurological Society (*New York Med. Journ.*, May 2nd, 1891), discusses the pathology of the cerebral paralysis of infancy. He divides them into the congenital cases, that is, those occurring before birth and due to gross cerebral defects; birth palsies, the result of protracted labour, where meningeal, or more rarely intracerebral, hemorrhage has taken place; and those acquired after birth, in which in agreement with the majority of recent writers on this subject, he considers vascular lesions as by far the most common cause; next to these he places chronic meningitis and hydrocephalus; and lastly, Strümpell's primary encephalitis. This last condition he believes to be excessively rare, and he holds that the theory should be accepted with some reserve. The diagnosis of the different kinds of vascular lesion that is, embolism, thrombosis, and hemorrhage, he admits to be sometimes very difficult, but when hemorrhage can be diagnosed, he thinks that surgical interference is imperatively called for. If the symptoms point to the formation of a large clot over the motor area of a child otherwise healthy and strong enough to endure the operation, he recommends that an attempt should be made to remove the clot in order at once to relieve pressure upon the given area, and to prevent secondary degeneration. This latter point would be certainly well worth attaining, but the diagnosis of intracranial hemorrhage in the young is by no means so easy. Still, where it can be made, there is no objection to the use of the trephine. (Supplement British Medical Journal, May 23, 1891, p. 164.)

EPILEPSY.—The Results of Operations undertaken for its Relief.

In a remarkable address on the supposed curative effect of operation *per se*, an abstract of which appears in the *British Medical Journal* of July 18, 1891, Dr. T. William White, of the University of Pennsylvania, has tabulated 154 cases, including his own service, in which operations were done for the relief of nervous phenomena. In fifty cases of trephining for epilepsy nothing abnormal was found to account for the symptoms. Nineteen cases were reported in six months or less after operation; eleven cases were reported from six to twelve months after operation; six cases were reported from one to two years after the operation;

and one was reported eight years after the operation. Twenty-five of these cases were reported as cured ; eighteen as improved ; in three cases it was mentioned that a relapse occurred later. In thirty cases of ligation of blood vessels for epilepsy, fourteen were reported as cured, fifteen as improved, one died seven days after the operation. In the fatal case the right common carotid artery was tied. No fit occurred after the operation. In ten cases of castration for epilepsy, all were reported as cured. One case was reported four months after operation ; four cases were reported more than two years after the operation ; in five the time when reported was not mentioned. In nine cases of tracheotomy for epilepsy, two were reported as cured, six as improved, one as much improved, though death in this case followed in two months after the operation. In twenty-four cases of removal of the superior cervical ganglia of the sympathetic nerves, six remained well at the end of three years, ten were improved, five remained unimproved, two died soon after the operation, but not from its direct effect. In six cases of incision of the scalp for epilepsy, nothing was found to account for the symptoms. Three of these cases were reported as cured at the end of three months or less ; one was reported as cured at the end of one year ; two were reported as cured at the end of two years ; two other cases almost similar were reported as cured. Twelve cases of epilepsy were reported as cured by such operations as stretching of the sciatic nerve, excision of the musculo-cutaneous nerve, cauterisation of the larynx, circumcision, application of a seton to the back of the neck, tenotomy of the external recti muscles, burning of the scalp, puncture of the heart, etc. Thirteen cases of spontaneous or accidental cures of epilepsy were also reported, at a time varying from two months to five years after the traumatism, which was a fall, a burn, a wound, an amputation for intercurrent injury or disease, etc. (British Medical Journal, July 18, 1891, p. 122.)

FACIAL NEURALGIA.—Butyl Chloral in.

According to Bocquillon (*Journ. de Méd. de Paris*, December 28, 1890) butyl chloral administered internally produces sleep, but without the disadvantage of causing any slowing of the pulse or respiration, and without producing any unfavourable after-effects on the digestive or other organs. The general evidence seems to indicate that when simple insomnia is to be combated, butyl chloral may prove efficacious, but when an anæsthetic effect is produced, it is of little value. Nevertheless numerous authors have recommended butyl chloral as a most efficient remedy in the treatment of facial neuralgia, when administered either in the form of solution or in pill form or enemata.

Subcutaneous injection should not be employed, as it leads to production of abscess. The author recommends its administration in the form of solution containing 10 parts each of hydrate of butyl chloral and 20 parts of glycerine in 120 parts of distilled water. A teaspoonful of solution contains about fifteen grains of butyl chloral, and may be administered in the dose of 1 or 2 teaspoonfuls daily. (Therapeutic Gazette, March, 1891, p. 200.)

FITS IN CHILDREN.—Treatment of.

Attention is directed in a paper published in *La Médecine Moderne*, to the usual advice of at once removing the clothes of a child affected with convulsions before giving it a warm mustard bath, with cold applications to the head. As the seizure is very apt to come from disorder of the digestive tube, a full dose of calomel or of castor oil may be administered with benefit. The administration of a vermifuge may also be indicated. When there is cerebral hyperæmia, the application of leeches behind the ears may arrest the convulsion. Mustard plasters may be perhaps of value, applied to the lower extremities, or even the compression of the carotids as recommended by Trousseau. A combination of chloral hydrate and bromide of potassium is especially reliable when the convulsions are obstinate. To new-born children the dose of chloral should be only $\frac{3}{4}$ grain; to nursing infants 2 grains; 3 to 5 grains to children of two years. When the convulsions have once been subdued, it would be well to continue the use of the bromides, prescribing bathing the head with cold water, general friction, lukewarm baths, and strict regulation of diet. With this may also be combined small doses of calomel and the valerianate and oxide of zinc. (The Practitioner, May, 1891, p. 382.)

FRIEDRICH'S ATAXIA.—Its Relation to the Conducting Paths in the Spinal Cord.

At the Congress of American Physicians and Surgeons, Dr. David Inglis, of Detroit, read a paper upon the above subject before the American Neurological Association. He reports in brief, a case of Friedrich's Ataxia in a boy of six years of age, in which the symptoms conformed accurately to Friedrich's own summary of the characters of the disease, viz.: "Impairment in the combination and harmony of movements developing gradually, and spreading from the lower to the upper half of the body, and always involving finally the organs of speech; sensibility, and the functions of the special senses and of the brain, being intact; paralysis of the sphincters and trophic disturbances are absent; less common phenomena are curvature of the spine, sensations of vertigo, and nystagmus. From a

clinical point of view we must regard the disease as a progressive paralysis of the faculty of combination of movements." A review of the thirteen recorded autopsies shows a practical agreement that the pathological condition underlying the disease consists in a progressive sclerosis which always affects the column of Goll, the column of Burdach also, but not so completely, the direct cerebellar tracts with Clarke's column in most cases, and the crossed pyramidal tract in some cases, but the sclerosis is here not so intense. We have to deal with a disease of the tracts which degenerate upward, which are usually looked upon as centripetal, and as conveying sensory impulses. Author contends that the symptoms of Friedrich's ataxia afford a demonstration that these tracts do not convey sensory impulses upward, for sensation is not impaired, but that they are the main tracts for the conveyance of co-ordinated moter impulses downwards; that their anatomical relations with the medulla, cerebellum, and mid-brain, as well as the facts of Friedrich's disease, agree in showing them to act to co-ordinate motor impulses of the mid-brain, cerebellum, and higher and lower levels of the cord. The facts of embryology strengthen this theory; at the end of the fœtal life, at a time when the pyramidal tracts are undeveloped, the posterior columns and direct cerebellar tracts are complete. Their function evidently begins at once after birth. When we remember that the new-born infant is characterised, not by voluntary control of its muscles, not by accuracy of sense perception, but by an extensive co-ordination of involuntary motor functions, the conclusion is easy, that these, the only tracts fully developed at birth, subserve these purposes. The direction of Wallerian degeneration is not necessarily the same as the direction of normal physiological impulses in any given nerve tract.

HEADACHE.—Treatment of.

Dr. C. W. Suckling, of Birmingham, after dealing with the varieties of headache, directs attention to the indications for treatment in migraine. Care must be taken to place the patient in the intervals of the attacks under favourable conditions. Tobacco, alcohol and especially mental worry must be forbidden; hot and crowded rooms must be shunned; errors of refraction should be corrected, and the patient's diet strictly regulated. A pill twice daily continuously consisting of one-sixth of a grain of the extract of Indian hemp, one-tenth of a grain of phosphide of zinc, and one-thirtieth of a grain of arsenic, may often give great relief. The severity and number of the attacks is often effectually diminished by one minim of liquor trinitrinæ two or three times daily after meals, continuously. For the actual attacks, rest in bed in a dark room may be necessary; and relief

may be secured by a draught every hour consisting of ten grains each of antipyrin and ammonium bromide with twenty minims of sal volatile. The dyspeptic headache is usually removed by blue pill and euonymin. *Birm. Med. Rev.*, p. 65, August, 1891. (The Practitioner, November, 1891, p. 378.)

INCONTINENCE OF URINE IN CHILDREN.—Antipyrin for.

Many methods of treatment have been proposed and employed in incontinence of urine in children—belladonna and strychnine by Trousseau, electricity by Guyon, bromides, certain mechanical procedures, &c. All, or nearly all, of these have been attended with success at times, but none is infallible—where one fails another remedy may succeed. Antipyrin is now put forward by M. Gundez, who claims for it a place amongst the best of remedies in the therapeutics of this troublesome and common affection. Out of thirty-seven cases treated by this drug, nineteen were completely cured, fifteen much relieved, and in three only did the remedy completely fail. According to M. Gaudez, these results are much superior to those of other therapeutic measures. He administers it in wafers containing from seven to fifteen grains, or in a mixture. This latter may have from twenty to sixty grains, according to the age of the child, to be taken in divided doses with two hours' interval. The time at which the medicine should be given is of importance. Thus he found that a child who took the last dose at 8 p.m. would not micturate before 5 a.m.; while if taken later, between 9 and 11 p.m., the incontinence was often entirely suppressed, even in the second half of the night. In cases where the antipyrin treatment was successful, the improvement was manifest early; but it is advisable that it be kept up for at least fifteen days in order to insure a cure. The sensibility of children to the action of antipyrin is variable. Some who are not affected by twenty or thirty grains are cured by sixty grains. Sometimes the incontinence will return, in which case the dose should be increased and the drug long continued. Antipyrin is well borne by children as a rule. In one of the cases cited there was some gastro-intestinal disturbance of slight moment, and in another a cutaneous eruption which soon subsided. (The Lancet, August 8, 1891, p. 326.)

INFANTILE PALSY, DEFORMITIES OF.—Mechanical Treatment of.

[Dr. Willard of the University of Pennsylvania appends the following conclusions to a paper on this subject.] 1. Even the severe resultant deformities of infantile paralysis are capable of

being benefited by the skilful employment of surgical measures and mechanical appliances. No case with fairly strong upper extremities should remain in helpless cripplehood, since even crutch locomotion is far preferable to a life upon the floor or upon the bed. 2. The deformities following infantile paralysis can be largely prevented by the early use of some form of apparatus. 3. Surgical measures in long-standing cases should usually precede mechanical appliances, since pain and time are thereby saved, and the resulting limbs are in nowise inferior to those obtained by the slower processes of mechanical rectification. 4. The surgical measures to be employed are tenotomy, myotomy, division of the fascia, application of force and resection. Osteotomy and amputation are sometimes necessary. 5. Mechanical appliances should be used to retain the limb in proper position, but they should not interfere with the circulation of the member. Crooked limbs can often be straightened so as to be made a part of the apparatus, and the muscles of these limbs should be compelled to do their full extent of work in supporting the body. The apparatus must frequently be made to support a large portion of the weight of the body, the helpless, flail-like limbs being accessories. 6. No case should be abandoned without the most careful and repeated attempts at rectification, as even feeble locomotion will in time become greatly improved by exercise in walking, and the health and happiness of the individual will thereby be greatly increased. (The American Journal of Medical Sciences, May, 1891, p. 476.)

INFLUENZA.—Neuroses following.

At the Medical Society, on November 2nd, 1891, Dr. Savage said he had seen in all some 54 cases of neuroses following influenza—33 in men, and 21 in women. In 4 there resulted general paralysis of the insane ; in 20, melancholia ; in 13, acute mania of the ordinary type ; in 6, delirious insanity ; in 5, delirious mania ; and in 6, mental weakness of some sort. Three-quarters of the patients recovered, and only 3 died. He then read notes of the more noteworthy and unusual of the cases. Rarely, if ever, did a neuroses present itself in a perfectly healthy individual as the sequel of an attack of influenza. All of them were suffering from some form of degeneration, or were under the influence of some potential cause of degeneration, such as alcohol or syphilis, or came of highly neurotic stock. In some cases several of these factors were present at one and the same time. He called particular attention to one case on account of its possible medico-legal interest. It was that of a coastguardsman with a history of severe head injury twelve years before, but always of the most exemplary character and conduct, who, on returning to work

soon after an attack of influenza, lost his memory of what occurred, although, as he subsequently ascertained, he had done his work properly, even during these periods of forgetfulness. He experienced a desire to kill one of his children, and, resisting that, he wandered off aimlessly from the country town in which he lived to London, only remembering snatches, so to speak, of his peregrinations. Then he gave himself up on a charge of killing his child. The patients who developed general paralysis of the insane had all shown signs, previous to the illness, of impending nervous breakdown. In the asylums, influenza seemed to attack the sane more generally than the insane, and was equally marked by neuralgic pains in the limbs, &c. There was no definite relationship between the severity of the attack of influenza and any subsequent neurosis. Any form and variety of insanity might occur, but nervous symptoms of all sorts occurred quite independently of insanity. Simple neuroses were common with or after an attack such as sleeplessness, neurasthenia, hypochondria, epileptic fits, in one case even diabetes. The dangerous cases were of two classes—patients suffering from acute delirious mania and those suffering from general paralysis of the insane. The treatment was general rather than special—good food and surroundings, hypnotics, &c. (The British Medical Journal, November 7, 1891, p. 997.)

KNEE-JERK.—Return of in a Tabetic.

Dr. J. Hughlings Jackson, in the *British Medical Journal* for July 11th, reports a very interesting case of return of the knee-jerk, after hemiplegia, in an old case of tabes. The patient, a man forty-nine years of age, had contracted syphilis some twenty-three years previous to the report of the case. At the time that he came under observation, in February, 1888, the symptoms of tabes were typical. There was also some evidence of hemiplegia, the patient having suffered from two attacks a short time before his admission to the author's service. About forty-seven days after the second attack of hemiplegia the return of the right knee-jerk was noticed, and subsequently the left was obtainable by re-enforcement. It was presumed that the return of the patellar reflex was contemporaneous with the establishment of sclerosis of fibres of the pyramidal tract in the bundle of deep fibers of the lateral column. It is well known that in many cases of uncomplicated hemiplegia there is exaggeration of both knee-jerks. It has been shown by various authors that at least in some cases of lesion of one internal capsule there has followed degeneration of fibres in both lateral columns.

LOCOMOTOR ATAXIA.—The Suspension Treatment of it and other Nervous Diseases.

Julius Hess gives a very thorough review of the suspension treatment and its literature, from 1883, when it was incidentally discovered by Motschukowsky, to the present. He, himself, has employed the treatment in eighteen cases; five of these were cases of locomotor ataxia, and eight of neurasthenia, the remaining five consisting of one case each of old neuralgia, spinal muscular atrophy, gastralgia, hypochondria, and cerebral syphilis. Three hundred suspensions were given, one patient, who had locomotor ataxia, receiving as many as eighty. The duration of the suspension at first was from one-half to one minute, and later, four minutes. Some patients were suspended every day, others every other day, and still others at irregular intervals. Pretty full abstracts of his cases are given. The patients affected with locomotor ataxia were not improved, or at least only temporarily. In the majority of the cases of neurasthenia no result was obtained. The remaining patients were either only improved transiently or were made worse. Hess admits that the experience of others has, for the most part, been more favourable, and that other methods have no better effect upon progressive locomotor ataxia. The method of suspension is convenient and time-saving, and, in the hands of a physician who chooses his cases properly and has suitable apparatus, it is not dangerous. *Berliner klinische Wochenschrift*, February 2 and 9, 1891. (Medical News, March 21, 1891, p. 334.)

MENINGITIS, DIAGNOSIS OF.—In Children.

At a recent meeting of the American Pædiatric Association, Dr. W. P. Northrup read an interesting paper on this subject. He gave four symptoms which, when they existed together, were to him convincing evidence of the disease—persisting vomiting, irregular pulse, irregular breathing, apathy; there were also other significant symptoms connected with the organs of special sense. Professor Jacobi agreed with Dr. Northrup in the importance of the persistent vomiting as a diagnostic sign; the vomiting is apt to be marked when the meninges of the base of the brain are the seat of the tubercular deposit; if the tubercular deposit is not marked in this region the vomiting is apt to be less pronounced or absent. Distinction must be made between the cerebral type of vomiting, which is projectile and not accompanied by nausea, and that which is merely reflex or of gastric origin. Dr. Northrup traced the infection in one of his reported cases to the use of tuberculous milk. (The American Journal of Medical Sciences, September, 1891, p. 325.)

MICROCEPHALUS.—Linear Craniotomy for.

[Professor Keen, of Philadelphia, publishes an important and highly interesting paper on this subject. Dr. Keen refers to his first case, published in the *Medical News* of November 29th, 1890, of which he reports the later history, and two additional cases that he has had, as well as brief notes of one furnished to him by Drs. B. Sachs and A. G. Gerster, of New York, and another similar, furnished by Dr. J. C. McClintock, Professor of Surgery in the Kansas Medical College, making, with Lannelongue's two cases and Wyeth's case, eight in all that have been done so far. Reference is also made to two other cases done before Dr. Keen's for the same disorder and the same intention, but by methods which, perhaps, should be classed as craniotomies. Commenting on the whole series of cases Dr. Keen says :] "In considering these cases one is struck by the fact that two of them were followed by speedily fatal results. I presume it is only to be expected that children of such feeble cerebral development accompanied with faulty circulation, should be less rugged and less able to stand the shock of an operation. I have not yet operated on both sides of the skull, and in view of our present experience I certainly would deprecate a simultaneous operation on both sides. Probably the additional shock would be very unwise, and would add greatly to the mortality. Whether two lateral operations done successively will improve the condition of such children more than one remains to be seen. The results as to mental condition in the six cases that have survived may be stated briefly as follows :—Lannelongue's second case was reported almost immediately, too early to judge of any results. So, too, of McClintock's case. In the other four children there can be no question of the improvement, very rapid in Lannelongue's case, slower but sure in both of my own and in Wyeth's case. We have, therefore, I think, sufficient reason to encourage us to operate in other cases, and it is this fact and the fatal result in two which has led me to report my cases so early, before the final results are obtained. This will require several years, and meantime we ought to make known the immediate results as a guide in other cases. The essential difference between trephining and linear craniotomy is this : that in linear craniotomy the intention is to make the entire side of the head a *bony flap*, as it were, whereas trephining is simply to remove two buttons of bone and the intervening bridge, and so produce a difference in pressure and possibly allow, simply at the point of trephining, a little bulging of the brain. As to the results, so far as the time will allow us to judge, they are quite as good after trephining as after linear craniotomy proper, and if so, it may be a matter of indifference which is done." (Ibid., June, 1891, p. 554.)

PARALYSIS AGITANS IN EARLY LIFE.

Dr. W. B. Hadden records a case of paralysis agitans occurring in a shoemaker at the very exceptional age of 28. He had infantile paralysis when two years old, and typhoid fever at fifteen. At twenty-five he had an attack presumably of acute rheumatism. Three months later his left hand began to tremble, and since then the movements gradually became worse. The patient was a healthy looking man, with a fixed expression of face. There was no marked defect of articulation; but when he spoke there was little movement of the face beyond the immediate neighbourhood of the mouth. The body and head were not inclined forward as is often the case in paralysis agitans. There were no tremors of the head or tongue, and no nystagmus. The whole left upper extremity was affected by rhythmical movements of abduction and adduction. The metacarpo-phalangeal and phalangeal joints were slightly flexed; and the digits were the seat of constant to and fro movements, which were much increased when he was excited or when he was being watched. The movements ceased entirely during sleep. There was no coarse muscular weakness, and no loss of sensation of the affected limb. There were no movements elsewhere in the body. The knee-joints were feeble; when walking he waddled from side to side, but his gait was not slow, and there was no tendency to festination.—*Brain*, part iv., p. 465, 1890. (The Practitioner, August, 1891, p. 129.)

PERFORATING ULCER.

MM. Tuffier and Chipault (*Arch. Gén. de Méd.*, September, 1891) commence a clinical study of this disease, based on some fifty original observations as well as published cases. Perforating ulcer most often occurs in a limb, the nerve supply of which is already perverted. Three forms of neuritis may be mentioned in this respect: (1) those not accompanied by any serious trophic changes or perforating ulcer; (2) those in which trophic changes are brought about rarely and with difficulty; and (3) those in which these changes are produced readily and almost without any external aid. Slight injury, chemical agency, infective poison may become the localising cause. The latter more often operates at one or other period of the disease, substituting a septic for an aseptic condition. Ordinarily only a local inflammation is produced, the anæsthesia disappearing and the perforating ulcer becoming hyperæsthetic. At times there are more serious accidents where the disease is the starting point of an ascending neuritis which may extend to the cord, producing an acute myelitis, and, as in one recorded case, death by paralysis of the respiratory muscles. The causes of this perforating disease may start: (1) in the extremities of the

nerves. These may act not only by determining its localisation, but also by calling forth in a sound limb a neuritis not previously existing there. The following are examples—a traumatic purulent phalangeal arthritis which in a frost-bitten limb becomes the origin of a trophic ulceration ; a perforating ulcer occurs without known cause at the site of an ingrowing toe-nail ; the opening of a suppurating hygroma of the serous bursa of the great toe is the starting-point of the same disease. (2) In the nerve trunks. Injury to the nerves is a frequent cause of perforating ulcer of the hand, a cause rarely operative in the lower extremity. The neuritis may be either of an aseptic or simple degenerative nature, or more often septic in origin. Neurotomies, namely, aseptic wounds of nerves, do not produce it, nor yet a neoplasm affecting the nerve. (3) In the nerve centres. It has been noted in injuries to the spine, Pott's disease, tumour of the spine and in spina bifida, in which last case it is difficult to understand if hydrorachis be not present. (Supplement to the British Medical Journal, September 26, 1891, p. 99.)

POLIOMYELITIS AND POLYNEURITIS.

Blocq and Marinesco *(Nouvelle Iconographie de la Saltpêtrière)* publish a valuable and well-illustrated contribution upon this subject. The existence of infantile acute poliomyelitis is undoubted ; that of acute, sub-acute, and chronic poliomyelitis in the adult has, however, been questioned. The authors quote four cases with autopsies from the literature—of which they have made a careful review—as well as one not previously reported, which prove that all three adult forms do exist. They also report a case in detail which presented symptoms analogous to those of acute poliomyelitis, though there were certain psychic symptoms attending them, but which the autopsy showed to be an instance of polyneuritis. The case was very interesting, particularly on this latter account, and approached in its symptomatology a group of cases described by Korsakoff as "psychic, toxæmic cerebropathy," or "polyneuritic psychosis." As a result of their studies the authors draw the following conclusions : 1. There exist certain morbid conditions which exactly correspond from a clinical point of view to the disease described by Duchenne under the name of acute and sub-acute anterior spinal paralysis of the adult, and which are, in fact, dependent upon lesions of the anterior horns of the cord. 2. On the other hand there is a group of symptoms, more or less analogous to the preceding from a clinical point of view, and which may even cause confusion in diagnosis, to explain which no appreciable lesion of the spinal cord can be found. 3. It can be absolutely affirmed in certain of these latter cases that the

symptoms are connected with the peripheral neuritis found to be present. 4. There is room to suppose that the cerebral centres whose participation in the process is proven by the clinical symptoms, play a pathogenic *rôle* in these cases. (Amyotrophic polyneuritis accompanied by psycho-motor affections.) 5. It does not seem possible to determine with positiveness the relation which exists between these amytrophic paralyses due respectively to poliomyelitis and polyneuritis. At the same time the hypothesis which seems most plausible is that of a lesion of the neuro-muscular arc (cerebral motor cells ; ganglionic cells of the cord ; motor nerves ; muscles) by a pathogenic agent which attacks with greater or less intensity the differents parts of this apparatus. (The American Journal of Medical Sciences, April, 1891, p. 405.)

SCIATICA.—Treatment by Splint-rest and Cold.

[S. Weir Mitchell, *International Clinics*, Vol. I., 1891.] In cases of sciatic neuralgia—slighter forms, without marked organic changes—recovery, as a rule, occurs after rest for a few days, dry cupping, sinapisms, care as to gouty or other constitutional state. But even these cases may become chronic, and end in a true congestive and inflammatory condition. Generally sciatica is not a functional disorder, but an organic disease from the first, and is represented by inflammation of the sheath of the nerve, the connective tissue, and neurilemma. It is these cases of grave sciatica or sciatic neuritis which Weir Mitchell specially considers in his paper. The symptoms are described briefly. The long duration of the disease, for months or years, the affection of nutrition of the leg and of its sensibility in variable degrees, are pointed out. Generally old sciatica is single ; pain in both nerves may be due to spinal or caudal disease. After eliminating rheumatism, gout, syphilis, trauma, and pelvic growths, and deciding that the case is one of neuritis, Mitchell considers the most certain indication is to secure rest ; not simply by keeping the patient in bed, but by means of a long splint. An old-fashioned long splint from the axilla to the foot may be used, or a roughly moulded anterior splint, with a wooden attachment carried up laterally to the waist or axilla. The ankle must be so sustained " that the heel does not carry the weight of the leg." The knee must be gently flexed, and the angle of flexion changed a very little at each dressing. After a few days undisturbed rest all the joints must be carefully and slowly flexed and extended to a slight extent, to prevent too great stiffness, the common evil which follows the use of a splint. Only sufficient bandage to keep the splint in position ought to be used. If the patient cannot bear a long splint, an anterior suspension splint may be of some service.

By this simple treatment many cases of chronic sciatica may be overcome, which have defied more elaborate treatments. But if the case be not cured thereby, Mitchell recommends the daily use of Paquelin's cautery button at the pain points. If still obstinate, he employs *dry cold.* An ice-bag of caoutchouc is kept on the painful nerve tract, day and night, for two or three weeks ; or the leg is placed on a tin or copper gutter, on the under part of which is an ice-case three or four inches wide. This method of treatment by dry cold, though described by Mitchell many years ago, has been little used by others. As the pain disappears, the use of cold is diminished until it is only applied at night, or, for an hour or two, twice a day. If any pain points remain the use of the cautery is often valuable, but is apt to interfere with massage treatment, which is so helpful at this time. At this stage Mitchell employs kneading of the muscular masses of the leg, and also a gradually deeper surface rubbing in a downward direction over the nerve trunk, for half an hour twice a day. When the pain has disappeared "it is wiser for a while that at first the patient stand aided by crutches, and then walk with them, and not sit up, or not sit up long, as this brings pressure on a nerve which may still be sensitive." Often the patients are thin and anæmic, and *general* massage is of service after the rest treatment has been employed for some time ; but at first it must be avoided in order that the resting limb may not be disturbed. As regards general treatment, iron and cod-liver oil are given, and milk or soups between the meals. Strong galvanic currents may be of service in the milder forms of sciatic neuritis, but this treatment is as painful and less efficient than the cautery. If the wasted limbs do not gain in size and tone at the close of a treatment the stimulation of the induction current may aid in producing a more rapid result. Mitchell states that he has never met with a case of sciatica in which he was obliged to resort to nerve stretching. He has seen nerve stretching cure sciatica, but prefers to see what medical means will do first, and points out that nerve stretching is liable to fail like all other means. In double sciatica, probably due to caudal disease, he is more willing to think of surgical aid. The treatment of chronic sciatica by splint-rest and dry cold, as above described, is more apt than other means to effect permanent cures, and Mitchell has many times seen it triumph when all else had failed. (Dr. R. T. Williamson's abstract, Med. Chron., Aug., 1891, p. 353.)

SINGULUTUS, ALCOHOLIC.

At the Medico-Chirurgical Society of Edinburgh, on June 17th, 1891, Dr. Andrew Smart showed a case of critical alcoholic singulutus, continuous for weeks ; recovery ; treatment. The

patient, a navvy, was brought by the police to Ward VI. on May 20th. His condition was that of collapse, with gravescent coma and continuous singulutus ; the hiccough, of a distressing and exhausting character, recurring sixteen times a minute. It appeared that, on account of this condition having continued three weeks, the patient had not been able to obtain sleep, or take nourishment, however little, by the mouth without aggravating his trouble. It was accordingly deemed necessary from the outset to suspend absolutely feeding by the stomach, having recourse to nutrient suppositories and enemata ; and, with the object of ameliorating the gastric neurosis, morphia—in this case sulphate—was administered hypodermically every three hours, one-third of a grain each time. To permit of this strength of morphia being continued sufficiently long, and to guard against the occurrence of toxic narcotism, chloroform was administered simultaneously with the morphia, either by inhalation or by ingestion—in the latter case 60 minims of the *spirit* of chloroform being given each time. When inhalation was used it was found necessary to continue it until it arrested hiccough, and this usually did not occur before chloroform narcosis was induced. We succeeded, by these methods, in arresting the continuity of the singulutus, and after forty-eight hours' continuance, day and night, the patient had gained seven hours' sleep. By the sixth day diaphragmatic spasm was completely arrested, and, by the ninth, feeding by the mouth was gradually resumed, the patient thereafter progressing towards recovery. For twelve days the patient was absolutely fed by rectum. This method, during the whole course of the case, was well tolerated by the bowel, and so carefully carried out by the nurses, in reference to details, as to have been rendered perfectly successful. The case is instructive as representing the severe and usually fatal type of singulutus connected with chronic alcoholism. (Edinburgh Medical Journal, September, 1891, p. 264.)

TIC-DOULOUREUX.—Pathological Anatomy of.

This is the subject of a paper read by Dr. Dana at a meeting of the New York Neurological Society, and he expresses the opinion that the ordinary cases of tic-douloureux are due, not to neuritis and degenerative changes in the nerve, but mainly to an obliterating arteritis of the nutrient vessels of the nerve. His reasons for this view are that the disease occurs only at a time of life when degenerative changes in the arteries begin, that it follows a certain fixed vascular distribution, that in four cases examined no noteworthy change was observed in the nerve, whereas in three there was striking evidence of arterial disease, and that therapeutical experience (*e.g.*, the relief some-

times afforded by nitro-glycerine) strengthens the view that arteritis is a factor in the disease. (Glasgow Medical Journal, May 1891, p. 400.)

TORTICOLLIS, ACUTE.—Treatment of.

According to Professor Phocas, of Lille (*Rev. des Mal. de l'Enf.*, October, 1891) acute torticollis is far more common in childhood and youth than in adult or old age. He recognises two main varieties: (1) acute torticollis following immediately a sudden movement of the head, and due to sprain of one or more articulations on the cervical vertebræ—acute traumatic torticollis; (2) acute torticollis following exposure to cold, and due to slight cervical arthritis or to muscular rheumatism—acute rheumatic torticollis. In a few cases the acute traumatic variety may be due to partial rupture of muscles. In either of the two above mentioned forms clonic contractions may be superadded to the tonic contracture. The muscle involved primarily is usually the trapezius. As to treatment, hot applications are the best anodynes; massage of the contracted muscle is a more effectual remedy, and often gives immediate relief, but M. Phocas recommends particularly the application of a collar in the following manner. The patient is placed in a Sayre's suspension apparatus as for the treatment of cervical caries; he is then very slowly suspended partially. In this way the muscles are uniformly stretched, and their resistance gently overcome with little or no pain. A collar of moistened mill-board is now applied and retained in place by a few turns of bandage. The patient remains in the apparatus about ten minutes more, and when liberated is free from pain. In one case the collar was removed on the next day, and the symptoms had all disappeared. (Supplement to the British Medical Journal, October 10, 1891, p. 115.)

TREADLER'S CRAMP.

Dr. W. H. R. Rivers publishes the case of a man, of fifty-six, who had been a handloom-weaver from the age of sixteen. Whilst working he stands leaning back against a rail, using both hands and working the treadle principally with the right leg. He began to make mistakes in his work ten years ago, which at first he attributed to a defect in his machine. Later on, the right leg became lame in walking, and he then found that the mistakes in his work had been due to imperfect treadling with that leg, which has since gradually increased. The difficulty occurs at the commencement of the movement of flexion of the hip and knee, which corresponds to the upward motion of the treadle, the extension or downward movement being unaffected; the flexion of the limb when treadling, is

performed with great difficulty, as if some resistance were being overcome, the thigh becoming inverted during the process. By supporting the lower end of the thigh, and especially when any pressure is exerted in the popliteal space, the spasm is lessened. The patient goes upstairs with difficulty; downstairs easily. That we should thus get an affection of the gait is, Dr. Rivers points out, in accordance with Dr. Vivian Poore's observation that, while in an occupation-spasm, like writer's cramp, in which the movements concerned are fine, the affection is usually (though not invariably) limited to the act of writing; in those in which the movements are large, as in hammerman's cramp, the limb suffers for modes of action other than that of the occupation. Since both walking and going upstairs involve flexion of the limb similar to that which occurs in treadling, it might be expected that both movements would suffer in this case. The left limb is used normally. The tendon-jerks are equal and not exaggerated. Certain muscles show decided changes in their electric irritability. This is in favour of the view advanced by Dr. Hughlings Jackson that the affections known as "occupation-spasms" are due to defective action of some elements of the spinal centres or of their homologues higher up.—*Brain*, liii., p. 110, 1891. (The Practitioner, August, 1891, p. 128.)

AFFECTIONS OF THE CIRCULATORY SYSTEM.

ANEURISM OF THE AORTA.—The Use of Iodide of Potassium in.

To obtain improvement it is not needful to give large doses of the iodide, but we must give enough. The proper course is to put the patient in the recumbent posture for a couple of days, so as to get his normal pulse in recumbency always five or more beats lower than when erect. Next we begin with five grains of the iodide of potassium (the iodide of sodium has not the same effect) in some bitter infusion, preferably chiretta, every eight hours; this dose is continued for two or three days, the pulse-rate being taken at the same hour daily. After two or three days the dose of the iodide is raised to ten grains every eight hours for three or four days, the pulse-rate being carefully taken in the same manner. In this way the dose may be gradually increased until a dose is reached under which the pulse-rate is found to rise, then we must stop the medicine for a day and go back to the previous dose. The moment the pulse-rate rises the benefit ceases, and the constitution begins to suffer. Only seldom is it needful or advisable to raise the dose over ten grains every eight hours; commonly enough five grains

is quite sufficient. The maximum of benefit is obtained by a dose just below that which lowers the blood pressure so far as to cause the pulse-rate to rise. Two, or at the most three, weeks is quite long enough to continue the remedy every eight hours. Afterwards it is sufficient to administer it every twelve hours, and to continue it from three to six months to put the patient in a very comfortable position. The length of time the remedy has to be continued depends very much upon the size of the aneurism when the treatment is commenced. (Dr. G. W. Balfour, British Medical Journal, June 6, 1891, p. 1221.)

Aneurism of the First and Second Parts of the Subclavian.—Treatment of.

Dr. Joseph D. Bryant, of New York, appends the following conclusions to a paper on this subject:—(1) The lease of life gained by the so-called medical treatment of subclavian aneurism emphatically teaches that its employment should precede all other methods. (2) The lease of life following distal ligature of the subclavian and carotid arteries, for the cure of aneurism of the first two portions of the subclavian, cannot as yet be estimated, because of the paucity of these cases that have an undoubted diagnosis. (3) The lease of life following ligature of the innominate alone, for subclavian aneurism, does not justify the operation; but ligature of the innominate, when supplemented with simultaneous and consecutive ligature of the associated contiguous arteries, or by other expedients equally well intended to aid the cure, is worthy of favourable consideration. (4) The lease of life gained by the pin-irritation method of Macewen, and galvano-puncture with its associated treatment, warrants a strong belief in the special benefits of these expedients, when employed singly or with ligaturing. (New York Medical Record, March 14, 1891, p. 308.)

ANGINA PECTORIS.

At the Medical Society of London, on March 9, 1891, Dr. Lauder Brunton reopened the discussion on Angina Pectoris. He agreed with Dr. Powell and with the other speakers that the subject of angina pectoris should be treated on a wide basis. In discussing the subject much help might be obtained from the analogy pointed out by Professor Grainger Stewart between the heart and the bladder. Both were hollow, muscular organs, contracting and dilating at fairly regular intervals, and expelling liquid contents. In both slight distension formed a stimulus to contraction, but if the distension became excessive it might cause pain varying in amount from slight discomfort to extreme agony. The sensation of pain was always central, for it depended on a condition of the brain which might be excited by a peripheral

irritation like a diseased joint, but might exist quite apart from any peripheral disease, as in hysteria. A mixed condition might exist which was both central and peripheral, as in the vesical crisis of locomotor ataxia, and possibly a similar condition might occur in the heart. Usually distension, either of the bladder or the heart, not only caused contraction in them, but, through the nervous system, lessened the resistance of the sphincter in the case of the bladder or of the arterioles in the case of the heart. Disturbance of this nervous relationship might cause excessive distension or pain in either organ, apart from organic disease, giving rise to spasmodic retention or vasomotor angina. But while the spasmodic character of angina pectoris indicated its nervous origin, it was so frequently associated with diseased coronary arteries and fatty heart that these evidently played a great part in its causation. Angina pectoris might be said to be due neither to high tension alone nor weak heart alone, but to weakness of the heart in relation to the resistance it had to overcome, and it might be brought on either by weakening the heart or increasing the resistance, or both together. In tracing out its pathology the analogy with the bladder was useful. The resistance which the heart had to overcome depended upon the contraction of the systemic arterioles. Of these there were three sub-divisions—cutaneous, visceral, and muscular—and the latter was the most important in relation to the attacks of angina. One of the most striking symptoms of angina was the ease with which it was brought on by muscular action. The first effect of this was to prevent the passage of blood through the muscles and to raise the tension, although afterwards the vessels of the muscles dilated and the tension fell. To this primary rise Dr. Brunton attributed the occurrence of anginal attacks on exertion, and their passing off if exertion could be continued was, he considered, due to the subsequent dilatation of the vessels of the muscles, with consequent fall of blood-pressure and lessened resistance. He thought that atheroma of the coronary arteries was so powerful in causing angina because it prevented the supply of blood to the heart being increased on exertion as it ought to be in muscles generally. The pain of angina he considered to be due to distension of the heart, and its more common occurrence in the left than the right side of the heart to be due to the greater ease with which the tricuspid valves became incompetent than the mitral when the ventricles became dilated. Angina pectoris was very rare in children, but one case was recorded of a boy of fourteen in which there were aortic regurgitation and mitral stenosis, and another in a boy of eleven, where there was ossification of the auriculo-ventricular groove, conditions which would prevent dilatation of the mitral

orifice and insufficiency of the valves. He regarded the nitrites as the most efficient remedy during a paroxysm, and, on the whole, iodide of potassium as the most useful in the interval. He showed a tracing which appeared to indicate that it lessened the rise of blood-pressure on exertion, and mentioned a case illustrative of its remedial action. (Lancet, March 14, 1891, p. 602.)

Angina Pectoris.

Dr. Douglas Powell concludes an interesting paper with the following propositions :—Angina pectoris is a disturbed innervation of the heart or vessels, associated with more or less intense cardiac distress and pain, and a general prostration of the forces, always producing anxiety, and often amounting to a sense of impending death. (1) In its purer forms we observe disturbed innervation of the systemic or pulmonary vessels, causing their spasmodic contraction, and consequently a sudden extra demand upon the propelling power of the heart, violent palpitation, or more or less cramp and paralysis ensuing, according to the reserve power and integrity of that organ—*angina pectoris vasomotoria.* (2) In other cases we have essentially the same mechanism, but with the extra demand made upon a diseased heart—*angina pectoris gravior.* (3) The trouble may commence at the heart through irritation or excitation of the cardiac nerves, or from sudden accession of anæmia of cardiac muscle from coronary disease—*primary cardiac angina.* (4) In certain conditions of blood, or under certain reflex excitations of the inhibitory nerves, always however with a degenerate feeble heart in the background, we may observe intermittence in its action prolonged to syncope—*syncopal angina.* (The Practitioner, April, 1891, p. 257.)

Angina Pectoris.—Treatment between the Attacks.

The first and foremost, perhaps, amongst the drugs that are really efficient in tending to prevent the recurrence of the attacks in angina pectoris comes iodide of potassium in doses of five to thirty grains three times a day. Whether this acts as a simple eliminant, or whether it tends to increase the blood-supply to the heart by causing absorption of the deposits which block the coronary arteries, or whether it acts in some other way, we cannot at present tell; but about its practical use there can be no doubt whatever. In cases of fatty degeneration we may combine elimination with the administration of iron and of arsenic; and Oertel's method of gently graduated exercise may be beneficial if used with caution, but it must be used carefully or it will shorten the patient's life. (Ibid., Oct., 1891, p. 260.)

[See also Dr. Lauder Brunton's article on Angina Pectoris and Cardiac Pain, at page 184 of this volume of the *Retrospect.*]

CHOREA, RHEUMATISM, AND HEART DISEASE.

(Meyer, *Berlin klin. Wochensch.*, No. 28, 1890).—This paper is one of considerable interest, and is based upon observations made at Henoch's department at the Berlin Charité. There are of necessity certain sources of error in such figures. Rheumatic attacks in children are often so vague that even with the most careful inquiry they are frequently overlooked. During the five years in which these observations were made there were 18,074 children treated, of whom 121, or 6 per cent., suffered from chorea. Of these, 46 were boys and 75 girls. The youngest case was three years and a quarter old. The age in the majority of the cases was between the second dentition and puberty. There was a recurrence in 11 cases. Of all these cases, but 11, or 9 per cent., gave a history of rheumatism. In 3 cases both rheumatism and heart disease were present. In 13 heart disease alone was present. The author, therefore, believes that chorea is a symptom which may result from numerous causes. (New York Medical Journal, March 14, 1891, p. 317.)

ENDOCARDITIS.—Measles a Cause of.

At the Royal Medical and Chirurgical Society, on April 14, 1891, a paper by Mr. John H. Hutchinson, on measles as a cause of endocarditis, was communicated by Dr. Cheadle. The author called attention to the rarity of the occurrence of endocarditis as a direct result of measles. He recorded four cases of endocarditis, all of which occurred in an epidemic of measles at a boys' school:—*Case 1:* Boy, aged ten, with a rheumatic family history, developed mitral murmurs on the second day of the prodromal stage.—*Case 2:* Boy, aged nine, suffered from measles complicated with catarrhal croup and slight broncho-pneumonia; a mitral systolic murmur was heard on the fifteenth day.—*Case 3:* Boy, aged nine, several of whose relatives had suffered from heart disease, probably rheumatic, developed broncho-pneumonia and pleurisy on the second day of the eruption of measles, and endocarditis on the fourth day.—*Case 4:* Boy, aged eleven, having had repeated attacks of follicular tonsillitis, but no articular rheumatism, whilst apparently convalescing from a rather severe attack of measles, developed a systolic mitral murmur on the fourteenth day. The author suggested that a rheumatic taint might have been a predisposing cause, since the first case had rheumatic history and had suffered from chorea, the third had family history of heart disease, and the fourth had follicular tonsillitis. Dr. Cheadle said that there was nothing improbable, on the face of it, that the endocardium should be stirred up by the poison of measles, just as the mucous membranes were; and meningitis,

myelitis, and nephritis were known to happen in its course. This cause might account for a certain number of cases of so-called "unexplained heart disease." He had not met with any cases in the course of measles during life, but he had looked up the post-mortem records of the Children's Hospital in Great Ormond Street, and there were only two deaths in which affections of the heart were found amongst patients who died of measles. One was a case of old valvular lesion, and the other was one of pericarditis and pleurisy. He almost questioned whether this epidemic might not have been a very severe one of rötheln, as he had seen many more grave complications with that disorder than with measles. He doubted if in the first case the cardiac lesion could be put down to the measles, but the others appeared undoubtedly to be due to that cause. It was worthy of note that in none of the cases was there concurrent joint affection. (The Lancet, April 18, 1891, p. 880.)

HEART, CONGENITAL MALFORMATION OF.—Their Diagnosis.

This somewhat difficult subject is treated of in a very clear and satisfactory manner by Hochsinger in the *Wiener Klinik*, Heft 2, 1891. He concludes his treatise as follows: Endocardial murmurs over the orifices of the heart, with cyanosis and exaggeration of the second sound, point conclusively to a congenital inflammatory change in the valves at the venous openings. Harsh murmurs heard over the sternum, accompanied by cyanosis and exaggeration of the second sound, point to a patulous foramen ovale. Clear heart-sounds, with a high degree of cyanosis and a marked exaggeration of the second sound of the heart, indicate a congenital transposition of the origin of the aorta, and also the origin of the pulmonary artery from the left ventricle. Cardiac murmurs which are not heard loudest over the valvular orifices of the heart, but which are accompanied by cyanosis and exaggerated second sound, point to a combination of congenital defect in the septa between the cardiac chambers and transposition of the valvular orifices. (The American Journal of Medical Sciences, May, 1891, p. 535.)

SENILE HEART.—Alcohol in.

Alcohol in one or other of its various forms is often recommended as a fillip to a weak heart, or an aid to feeble digestion, and so it is *pro tempore*, but there is no greater mistake than to continue it as likely to benefit. Alcohol always tends to enfeeble a weak heart, and to lessen the power of a feeble digestion when continued for any length of time, and ought to be given up. I never advise alcohol in any form for such cases, and where old habits are too strong, I recommend that only light claret or

light and white hock should be taken with dinner, and of these not more than one or at the most two glasses. Whisky, as one of the purest spirits, is also one of the safest, being utterly devoid of the slightest tendency to develop gout, a tendency which even light claret is not altogether free from unless used most sparingly. On the other hand, the potency of the spirit makes it rather a hindrance than a help to digestion unless taken in small quantity and freely diluted. There is no more potent cause of cardiac dilatation than the abuse of spirits, and there is no greater and more certain obstacle to the rehabilitation of such a heart than the excessive use of spirits. (Dr. G. W. Balfour, Edinburgh Medical Journal, June 1891, p. 1088.)

[See also Dr. Balfour's articles on the Senile Heart at pp. 194-199 of this volume of the *Retrospect.*]

TACHYCARDIA.

At a meeting of the Society of Internal Medicine of Berlin, January 19, 1891, Fraentzel spoke upon tachycardia. Since the first publications upon this disease the number of communications on the subject has increased from year to year. But a mistake has crept in. The habitual acceleration of the pulse which is present in the most diverse diseases of the heart, and which persists without recognizable change for years, should not be called tachycardia; this name should be reserved for the paroxysmal acceleration of the pulse—the essential paroxysmal tachycardia of the French, in which the disease occurs suddenly, and the pulse increases to 180 or 200 beats per minute. The symptoms of tachycardia may be explained in two ways, as the result of palsy of the vagus, or from irritation of the accelerator fibres of the sympathetic. The latter cause is more easily understood, the symptom occurring as a spasm, or neuralgia, or a colic occurs. Although from the very beginning the tendency has been to attribute tachycardia rather to a palsy of the vagus than to a stimulation of the sympathetic, yet there are individual symptoms inexplicable by that hypothesis; for example the attack ceases if a blow is struck upon the thorax, and the paroxysm begins with pallor and dilatation of the pupils and subsides with such symptoms as sweating, flushing, and contraction of the pupils. Excitement of the sympathetic is often cured by a dose of morphine, while in palsy of the vagus digitalis acts very well, or the attack may be cut short by compression of this nerve. Recovery, however, does not always occur so quickly; frequently the disease lasts for years, and then ceases suddenly. The lack of a clear understanding of the cause makes the treatment uncertain. One should not, however, following Nothnagel, discard all treatment, on the ground that the attacks are not serious and that the disease will subside of

itself. Fraentzel, for example, has seen several grave cases, in one of which there was extensive stasis in the lungs and veins, with cyanosis, orthopnœa, catarrh of the lungs, and swelling of the liver. Morphine was of no use in this case, but digitalis overcame the condition. The severity of the symptoms at that time convinced Fraentzel that the disease might result fatally, and since then he has discovered two fatal cases in the literature of the subject, and has subsequently seen one himself. His own case was that of a workman, thirty-five years old, who complained of dyspnœa, which occurred suddenly; he had formerly had cardiac palpitation. The heart was not enlarged, and its sounds were normal. On the day after admission his pulse was 180, and the respirations 40. Digitalis caused the symptoms to disappear within twenty-four hours, and was just as prompt in several other attacks. Finally, however, this drug failed in a fresh attack, and the heart became visibly enlarged; the pulse was 172; cyanosis appeared, followed by death. At the autopsy both ventricles were found dilated, and the papillary muscles flattened. There was also fibrous thickening of the endocardium. The valves were intact.—*Münchener med. Wochenschrift*, February 3, 1891. (Medical News, March 28, 1891, p. 363.)

VARICOSE VEINS OF LOWER EXTREMITY.—Ligation of Saphena Magna for.

Trendelenburg (*Beitr. zur klin. Chir.*, Bd. vii., Heft 1, and *Rundschau*, 32 Jahr., Heft 5) recommends as an exceedingly efficient treatment in certain cases of varicose dilatation of the veins of the leg, where this dilatation affects not only the branches of the vein but the main trunk also, ligature of the saphena magna. Before operating the surgeon must assure himself that the dilated trunk is the only one which carries the blood from the parts below, since very frequently there are two principal branches of the saphena, which, if both are so widely dilated that the valves are incompetent, must both be tied before any amelioration can be expected. The best place to perform this ligation is about the middle of the thigh. An incision an inch long is made in this region; the vein is exposed, a double ligature is applied, and the vessel is divided between. As a result, the blood is carried from the superficial portions of the limb by the deep communicating veins. The improvement is immediate and permanent. Long-lasting varicose ulcers heal quickly after this operation. Frequently the varices do not entirely disappear, but the condition is always greatly improved. Of course, this method of operating requires the most careful application of antisepsis. (The American Journal of Medical Sciences, July, 1891, p. 93.)

AFFECTIONS OF THE RESPIRATORY SYSTEM.

ASTHMA IN CHILDREN.

R. Blache (*L'Union Médicale*, 1890, No. 133) defines asthma as a bulbous disease, in which attacks are produced by impressive irritations of the vagus or peripheral nerves, particularly the trigeminus; the reflex action manifests itself by successive or simultaneous spasms of all the intrinsic inspiratory muscles, intercostals, scalenæ, trapezii, &c., and by a tetaniform contraction of the diaphragm. The treatment recommended for the attack is fumigation by belladonna cigarettes, henbane, or the leaves of datura, stramonium, nitre paper, inhalations of oxygen, or ioduret of ethyl, but in many cases the hypodermic exhibition of morphine will be required to produce even momentary relief. In a general way, opium ought to be very prudently used with children; belladonna is much safer and can be used longer. Bretonneau and Guersant mix one centigramme of the extract to one centigramme of the powder of belladonna, giving this each day and continuing for some time. The tincture of lobelia inflata may be given in a dose gradually raised from 20 to 100 drops. Moncorvo remarks that the endurance of children for the treatment permits him to raise the dose 10 and 12 grammes in twenty-four hours. Blache has obtained excellent results from tincture of grindelia robusta, which he gives to children in doses of from 15 to 60 drops. Inhalations of vapour of pyridine, advised by M. Sée, have helped Blache to lessen the force of the attack According to Laborde and Daudrie, this substance lessens excito-motor force, dilates peripheral vessels, and has a paralyzing action on the vasco-constrictor nerves; hence, it increases the fulness of respiration, at the same time the respiratory movements regulate themselves and diminish in frequency. The curative treatment of asthma limits itself to the almost exclusive use of iodine, particularly the iodide of potassium. The anti-dyspnœic effects of this agent on the brain, and particularly on the bulb, are certain; Binz states that it paralyzes the nervous functions and produces narcotism; in every case it moderates the exciting power of the vital centre and regulates the distribution of the nervous influx. (American Journal of Medical Sciences, July, 1891, p. 105.)

EMPYEMA IN CHILDREN.—Prognosis in.

[Dr. Koplik publishes an exceedingly interesting and important paper on the Etiology of Empyema in children, which he brings to a conclusion with the following remarks upon prognosis.]

We can safely say that the present status of our knowledge in these cases enables us to assure our patients with moderate

certainty as to the outcome of the illness of their children. Such prognosis may be made at the bedside or within a very short period from the first examination of a case. The simple means at the disposal of every clinician are adequate for the examination of crude specimens of pus, and delay of a day or two at the most is all that may be necessary for more deliberate investigation. Nor do I think that we should take too much credit to ourselves for the recovery of a certain class of these cases which, under proper guidance, invariably get well. Thus, it would appear that the best prognosis is held out to those cases in which the staphylococcus pyogenes aureus, or the streptococcus pyogenes is found, and those cases which follow upon acute pneumonia. More especially is this true of cases of meta-pneumonic empyema. In one of these, in which the purulent exudate filled the chest and was withdrawn from the same by exploring needle and contained pneumococci, the patient recovered ; having refused operation, the empyema perforated the lung and thus gained exit externally, pus being coughed up. Subsequent examination of this case revealed nothing abnormal on the diseased side but slight dulness. The lung had thoroughly expanded. Fränkel records similar cases in the adult. It would scarcely be well to expect too much from such *laissez faire* treatment, for a large percentage of cases which are allowed to perforate die. The age of the patient and the presence or absence of any considerable pneumonia will weigh in each case. Some authors are enthusiasts for the simple opening and drain in the chest ; others insist on the trial of repeated aspiration ; others contend that resection of the rib is the only safety of the patient and secures a rapid expansion of the lung. The truth lies in the etiology of the cases of empyema. In the meta-pneumonic exudates cases will do equally well by the various modes of treatment ; in other words, the pus evacuated by whatever means, there is an inherent tendency to absorption of what inflammatory product there is remaining and return to a normal status, as in the pneumonic lung. The pneumonic exudates, if they hold out such brilliant prospect of recovery to the patient, are a striking contrast to the tubercular cases, where only a partial recovery is at best possible. There are cases on record where, especially in children, an empyema (Ziemssen's *Vorträge*) of established tubercular nature has made an apparently good recovery, yet we must doubt its permanency. We cannot rid ourselves of the idea that a large extent of surface like the pleura, once tubercular, must, if recovery takes place, be a latent danger to the patient. In other cases, the recovery results with fistulæ, retraction, and all the concomitants of permanently crippled respiratory apparatus. The pyæmic cases are fatal as far as we know. (Ibid, August, 1891, p. 162.)

Empyæma.—Relation of, to Acute Pneumonia.

It is noteworthy that in some cases the disease is protracted much beyond the usual limits, the pulse and temperature declining about the tenth day, and the general symptoms improving to a certain extent, but with a continuation of the dulness on percussion and a degree of illness that still excites uneasiness. In the great majority of instances these cases turn out to be purulent effusion (empyema) following on the attack of pleuro-pneumonia. This is a point of the greatest practical importance, for if not recognised and dealt with, the patient may sink exhausted in a few weeks. I have already expressed an opinion that the ordinary cases of empyema that come under treatment as chronic or subacute chest affections are the outcome of pleuro-pneumonia, and my later observations have convinced me of the truth of this statement, and if such be the case, the prognosis of pneumonia embraces the prognosis of empyema—an exceedingly difficult task. (Dr. Drummond, The Lancet, March, 21, 1891, p. 649.)

[See also Dr. Drummond's article on the Relation between Empyema and Croupous Pneumonia, at p. 211 of this volume of the *Retrospect.*]

EPISTAXIS.—Method of Plugging the Nares for.

I am prompted to give a method I have used for many years for the relief of epistaxis, and also for safety from its occurrence after operations within the nares. The method is thus: Take an elongated quantity of cotton-wool, lengthwise of the fibres, which, when doubled upon itself, will be somewhat conoidal, and completely fill the naris it is intended for, especially the posterior end; but before doubling it upon itself fortifying the cotton by spiral turns of soft thread, such as is used by grocers, then, doubling the mass upon itself, you have a cone of cotton, three or four inches long or more, from the smaller end of which extend the strings, which ought to be tied together, the knot to include some of the fibres of the cotton at the ends. Now, if thought necessary, this mass can be saturated with a solution of alum, but preferably it may be anointed with a little lard or vaseline. Now with a thin probe or knitting needle in the right hand the mass of cotton is to be caught in its fold at its larger and what ought to be the distal end of the cone, while the strings are caught in the fingers of the same hand, and you have now the cone of cotton-wool extended upon your probe or knitting-needle, and secured in your right hand, while with the left hand the point of the nose can be elevated, and with a rather quick thrust the conoidal mass of cotton is carried back until the yielding sensation is imparted to the hand which indicates that the distal end of the

cone has emerged through the opening of the posterior naris into the pharynx. The slender probe or knitting-needle, or grooved director, as you please, is now easily withdrawn by giving it a sudden retractive start, and the knotted ends of the strings are then cut off and tucked into the naris out of sight, to be easily hooked out and grasped for the removal of the cotton plug that it secures in its spiral folds. It ought to be remembered that the direction of the floor of the naris, when the patient is sitting erect, is directly backward and a little downward, and also that the combined calibre of all the choanæ at the posterior naris is much greater than at the anterior naris. Hence, to plug successfully, the cotton conoid ought to be three or four times larger at the distal than at the proximal end when *in situ*. And again, in making the insertion, do so with a quick motion, and keep your probe close to the floor of the naris. A trial of this simple method will prove so efficient that I believe the surgeon will ever afterwards resort to it in preference to any other. (Dr. W. H. Daly, Pittsburg, Pa., U.S.A., The British Medical Journal, May 23, 1891, p. 1123.)

GANGRENE OF THE LUNG.

In the *Allgemeine Wiener Medicinische Zeitung*, No. 15, is an abstract of an interesting paper by Dr. Otto Hewelke on the etiology and treatment of gangrene of the lung. As regards the causal relationship which is supposed to exist between pneumonia and gangrene, Dr. Hewelke makes some important observations. He collected the reports of 2359 necropsies made at the Warsaw University, amongst which were 50 cases of pulmonary gangrene, and 146 cases of croupous pneumonia in none of which gangrene had supervened. From these data the author concluded that the occurrence of gangrene as a sequel of croupous pneumonia was only an accidental one, and stood in no causal relationship with the inflammation of the lungs. He suggested that a fresh infection must have taken place by means of the staphylo-coccus aureus or albus, probably from the inspired air, or decomposing material in the mouth or air passages, and that owing to the condition of the lungs the germs would find a favourable nidus on which to become engrafted. In regard to the treatment, Dr. Hewelke considered that the ordinary measures, such as the administration of turpentine, creasote, or inhalations of carbolic acid, only exert a palliative influence on gangrene of the lung, and he therefore attempted in undoubted cases a modified surgical treatment by antiseptic injections into the pulmonary tissue. The injections were made by means of a syringe holding about 2·5 ccm., and provided with a stout hollow needle about 5 or 7 cm. long. No unpleasant local effects were noticed. At first he used a mixture

containing 2 parts of menthol, 3 of oil of eucalyptus, and 100 of water. Afterwards, however, he found it better to employ an alcoholic solution of thymol in the strength of 1 in 300, or 1 in 200. Not more than 2·5 ccm. should be injected at one time. In addition to the antiseptic action of the injections, Dr. Hewelke was of opinion that they were beneficial on account of the slight irritation they produced, so aiding expectoration and accelerating the emptying of the cavities. The results obtained were satisfactory, the duration of the disease was lessened, the symptoms were not so severe, and the author considered that his preliminary researches denoted that in these injections is to be found one of the best methods for the treatment of this grave condition. (The Lancet, May 23, 1891, p. 1172.)

HÆMOPTYSIS.—Treatment of.

Professor H. Nothnagel publishes in a Vienna medical journal an interesting paper on the treatment of hæmoptysis. The first thing, he says, is absolute rest. If the loss of blood is at all serious, the patient must not utter a sound ; if it is necessary he should speak he must only whisper, or, better still, write down everything he wants to communicate. He must not be allowed to see visitors, and the sick-room must be kept at an even temperature. The patient must take nothing warm, nor anything likely to excite or irritate. The best food for the first two days is cold milk. Regular diet may then be resumed gradually, but all food which might increase the action of the heart must be avoided in future. Formerly an opinion prevailed that the patient should be allowed to cough, the retention of the blood being supposed to be hurtful, as it was believed that tuberculosis was a consequence of hæmoptysis, but this opinion is quite erroneous. On the contrary, one of the first indications is to suppress all inclination to cough as much as possible, for which purpose morphia is the best remedy. Should the hæmoptysis not cease, other remedies must be applied. The author first mentions those remedies which ought to be eschewed, and the use of which is occasionally a physiological error. The first to be banished is perchloride of iron, the action of which on the blood is to cause it to coagulate and to form a thrombus. In the form of inhalation it would be simply useless but for the great danger in allowing a patient suffering from hæmoptysis to draw a deeper breath than absolutely necessary for respiration. The liquor ferri, if administered internally, is, according to some, not absorbed at all, but, even if it be so, it would only tend to increase the hæmoptysis. The same may be said of tannic acid and of alum, which contract the blood-vessels only when diluted to $\frac{1}{6}$ per cent., and are consequently useless for hæmostatic purposes as well as for inhalation. The

author dispenses altogether with inhalation in hæmoptysis. The only two hæmostatic remedies he recommends as useful are ergotine and acetate of lead; the first may be used internally and in hypodermic injections, the latter may be given in conjunction with opium. Another remedy which he mentions, but of which he has himself no experience, is hydrastis Canadensis. A few years ago hypodermic injections of atropine were recommended, and Professor Nothnagel has occasionally seen them effective. No objection can be raised to half a teaspoonful of common salt when no other remedy is at hand. Hemorrhage from the lungs is certainly sometimes arrested by its use, but the author is not quite sure if the success is *post hoc* or *propter hoc*. Nor is he certain whether, as supposed by some, a reflex irritation of the pulmonary vessels takes place. This theory is certainly physiologically feasible, as recent experiments have shown that sensory excitement in some parts causes the blood vessels in other parts to contract. An application of ice, for instance, to the abdomen causes anæmia of the mucous membrane of the larynx. A very common remedy is the application of cold; but the ice-bag is, according to the author, of very doubtful value, as it is impossible to assume that the cold acts directly on the bleeding surface, for we do not know to what depth it penetrates. If the cold does act hæmostatically, the effect must be due to irritation of the skin. Professor Nothnagel warns us, however, that in some people the application of cold to the thorax causes cough, which is far more dangerous than the doubtful contraction of the blood-vessels can be useful. An extreme and heroic remedy is venesection. It is a well-known fact that wounded soldiers faint from loss of blood, when the hemorrhage immediately stops, and a similar observation has been made in metrorrhagia and hæmoptysis. (Ibid., October 24, 1891, p. 949.)

PHTHISIS.—Arrest of.

At the annual meeting of the British Medical Association (Bournemouth, 1891), Dr. J. K. Fowler said that the discovery of the tubercular bacillus had settled, so far as pathologists were concerned, the question which was long discussed as to whether phthisis was or was not always a tubercular disease. He proposed, indeed, that the term "phthisis" should be abandoned and be substituted by that of pulmonary tubercle. The term "fibroid phthisis" was unsatisfactory, as fibrosis might be due to chronic pneumonia or to the action of various mechanical irritants, that these ought to be classed as cases of chronic interstitial pneumonia, and that fibroid tubercle should be applied to those of tubercular origin. He was not satisfied of the existence of syphilitic phthisis. The so-called stages of

phthisis had also to be given up. He proposed that pulmonary tubercle should be classed as follows: (1) For ordinary phthisis the term "pulmonary tubercle" was sufficient; (2) miliary tubercle for cases where the lungs only were affected, or as part of a more general tuberculosis; (3) caseous tubercle, where the process was rapid and might be disseminated, but might affect one lobe only; (4) fibroid tuberculosis, in which there was a special tendency in the tubercles to undergo fibroid change, and was distinguished from ordinary chronic tubercle with cavity formation, fibroid walls, and thickened pleura. The history of tubercle might be very varied. Next he referred to the frequency with which pathologists met with appearances which they regarded as evidence of arrested tubercle, although it was still doubted by many clinical observers. The evidences on post-mortem examination which were regarded as proof of pre-existing tubercle were—(1) pigmented fibroid tubercles, either with or without evident tubercles; (2) caseous areas, or masses with dense fibroid capsule; (3) cretaceous masses; (4) small cavities; (5) scarring and puckering of pleura; (6) local adhesions, with thickenings of the pleura; and (7) caseous glands, and so forth. Any of these might be found in persons who had died of diseases which had nothing to do with tubercle, and from his statistics he found that about 9 per cent. of the bodies examined showed these; and his statistics agreed with those of other observers. A large number of cases showing arrested tubercle had died of cancer. Although capsules with caseous contents occurred, he had never seen what he would regard as a cavity capable of clinical recognition in which the tubercular process had been arrested. Although some believed they could follow the closing of cavities clinically, he confessed this was beyond his powers. The further question was, what was the proof that the lesions specified really represented arrested tubercle? First, there was the fact that encapsulated caseous masses may be followed by diffuse pulmonary tubercle if the barrier of fibroid tissue were broken down. Then cases occurred in which death was the result of tubercle in other organs than the lungs. Their site at the apex further supported this view, while there was an absence of any other adequate cause to account for the lesions. The method by which arrest took place was by the formation of a barrier of living tissue and fibrous encapsulation. But after the barrier had been formed danger still existed, for the caseous mass might soften and the capsule break down. The caseous or cretaceous mass might be expectorated; and there was always the element of constitutional vigour to be taken into account. In attempting to estimate the possibility of arrest, regard must be paid to the extent of lung affected. If cavity was present capable of clinical

recognition, it was probable that, sooner or later, extension would take place. When bacilli were present in the sputum, the condition could not go on to fibrosis, but might be present without much constitutional disturbance. (Ibid., August 8, 1891, p. 314.)

Phthisis.—Opium Smoking in.

I was greatly struck a few years ago, in reading an article written about China, to find it stated that in certain districts of that country where tuberculosis was extremely prevalent, the opium-smoking population were almost exempt from the disease, and this induced me to try the effect of a mixture of opium and tobacco upon some of my pulmonary patients, in a tentative way at first, and in small quantities, and, I regret to say, without keeping a careful record, for it was only when I found that the patients almost invariably expressed themselves relieved by it, and *seemed* better, that I began to note with accuracy the amounts given and any change which took place in the condition of the patient. My custom has been to soak the tobacco in Battley's liquor opii sedativus, choosing this preparation because it contains all the component parts of opium in a fluid form, and to use it when it has dried. I have given this mixture in various proportions, and I think that a useful strength is three fluid drachms of the Battley to one ounce of tobacco, but of course it can be made much stronger than this. I usually advise the patient not to smoke just before eating, and I never in any case tell him how the tobacco is medicated. The most marked therapeutic effects of smoking opium in this way are that it eases the cough, and acts as an expectorant, "cuts the phlegm," as the patient often expresses it. One poor man assured me that he had not the strength to get up in the morning until he had smoked part of a pipe to relieve his chest. The material which I have collected is not yet sufficiently large to draw any conclusion as to whether opium administered in this form has any specific effect upon the disease, although almost without exception the phthisical patients to whom I have given it have thought that they derived great benefit from its use. (Dr. Gordon Dill, Sussex County Hospital, Ibid., July 11, 1891, p. 60.)

PLEURISY IN CHILDREN.—Treatment of.

Dr. A. F. Plicque (*Progrès Médical*, January 31, 1891) summarises his observations on the subject of infantile pleurisies and their treatment in the wards of Dr. J. Simon in the Hôpital des Enfants Malades, Paris. Pleurisy in infants is almost always secondary to some inflammatory or zymotic disease. Effusions have a marked tendency to become purulent, and in the case of children under four years pus is the rule rather than the exception. The collections of fluid are very

proue to become encysted, and hence may be met with at any part of the chest, and not always at the most dependent portion. They are liable to burst internally, and the general prognosis is good, provided that the pus has free exit, either through the chest wall or through the lung. Such forms of effusion are, therefore, very different from the similar conditions in the adult. Owing to the almost constant complication with some other morbid condition in the chest, the diagnosis is frequently difficult. Progressive dulness, with absence of respiratory sounds over the same area, are the only trustworthy signs. The gradual progress of the altered physical signs must be closely watched for a time before a certain diagnosis can be made. In the early treatment of infantile pleurisy the use of calomel and digitalis is recommended, and a protest recorded against the abolition of the poultice, which is believed to aid absorption and to prevent the progress of the disease to the purulent stage. Tapping should always be done at first with the aspirator, an antiseptic solution being used to wash out the cavity. Fluid should always be withdrawn slowly and gently, and the introduction of the antiseptic solution—lukewarm boracic solution is the best for the purpose—performed with equal care and deliberation. No fear need be felt in using large quantities of fluid to flush out the pleura ; as much as five or six litres have been employed. If tapping fails to prevent the re-formation of purulent fluid, an incision must be made and irrigation carried out in the same way. The best point for incision in case of a general effusion is somewhat farther forward than in the case of an adult, the anterior axillary line being selected instead of the posterior line. In case of encysted fluid the incision must be directly over the point of localisation. Frequent and cautious washing out of the cavity is advised in after-treatment. Estländer's operation is rarely necessary in the case of infants.—*Chicago Medical Recorder*, May, 1891. (The Therapeutic Gazette, August 15, 1891, p. 559.)

PNEUMONIA. — Treatment of by large doses of Digitalis.

Professor Z. Petresco, of Bucharest, delivered a lecture on this subject before the Section of Internal Medicine at the last International Medical Congress. His general conclusions are as follows :—(1) Digitalis has a direct antiphlogistic action only in therapeutic doses. (2) The specific therapeutic dose is from 60 to 120 grains of the leaves, given as an infusion, within twenty-four hours. (3) This dose may be continued from two to four days according to the severity of the cases treated. Patients have received in the course of their disease from 300 to 360 grains in four or five days, without symptoms of nausea

or poisoning. The temperature fell from one to three degrees after single doses, and five or six degrees after two or three doses. The pulse fell from 40 to 60 beats after several doses. This reduction of the frequency of the pulse and of the temperature lasts ten or twelve days, and then they gradually become normal. (4) Disappearance of all local symptoms of the pneumonia is observed simultaneously with the improvement in the circulation and respiration. (5) The effectiveness of the treatment is confirmed by the statistics, the mortality being least under large doses of digitalis. (6) The applicability and harmlessness of the therapeutic dose are incontrovertibly proved by cases reported in full by Petresco's pupils—Brailov, Sacliano, Antoniu, and Constantinesco. (7) Comparative study of the various methods of treatment of pneumonia has persuaded Petresco that the expectant plan is not only irrational, but even dangerous. The supposition that pneumonia must run its course is not justified. Pneumonia may be aborted, especially if attacked at the beginning. — *Therapeutische Monatshefte*, February, 1891. (The Medical News, March 21, 1891, p. 335.)

[See also article by Dr. Drummond, on Prognosis in Croupous Pneumonia, at p. 199; and by Dr. Coupland, on the Treatment of Acute Pneumonia, at p. 203 of this volume of the *Retrospect.*]

THORACENTESIS.—The Accidents and Sequelæ of. Potain describes the accidents that may be observed after thoracentesis. They may be due (1) *To the pulmonary congestion* that follows the removal of the fluid, and is accompanied by an abundant, albuminous, bronchial expectoration. This bronchial hypersecretion is a result of the entrance of air into the bronchial tubes, which are unaccustomed to this abnormal irritation, and is not dependent upon distention of the lung. In the case of pleuro-bronchial fistula, when the air enters readily, the lung does not undergo distention ; nevertheless, albuminous expectoration is at times observed after thoracentesis. (2) *To Syncope.* When, for any reason, syncope is feared, special precautions should be taken to slowly remove only a small portion of the fluid. The patient should be operated on in the horizontal position. After the operation he should be kept in absolute repose. (3) *To embolism*, caused by clots from the pulmonary veins. The heart may be arrested, or the emboli may be carried into the large arteries of the brain, giving rise to hemiplegia ; into the small cerebral arteries, occasioning abscess ; or into other arteries, forming infarcts. Embolism of the pulmonary artery has been observed. When the action of the heart has been hampered by a large effusion, the pressure exerted upon the auricles, the torsion or the compression of the pulmonary veins, conjoined with a certain degree of irritation

of the endocardium, may determine coagulation of blood within the heart. After thoracentesis, as soon as the blood-current is normally re-established, fragments of the clot may be detached and propelled into the pulmonary artery. Finally, patients, especially advanced in years, may succumb to *cardiac weakness.* When the circulation becomes easier the heart is unable to propel the increased volume of blood, and it ceases to act. The accidents consecutive to thoracentesis are not rare, although their frequency is not great. An important factor is the quantity of fluid removed. The operation should not be too contracted. It suffices to withdraw one-half of the fluid, which should be allowed to escape slowly, simply by its own pressure. The forced expiration, consequent upon the cough induced by the escape of the liquid, increases the rapidity of the flow. It is the habit of some operators, when the liquid does not readily flow, to encourage the patient to cough. Such a procedure is not unattended with danger. The frequent transformation of serous into purulent fluid must be related to the apparatus employed in the operation. This accident may be prevented by perfect asepsis. When the period for these accidents has passed, the ultimate prognosis will vary with the age of the effusion and the degree of compression to which the lung has been subjected. In the case of recent and moderate effusions the pulmonary expansion is readily restored; this often happens in the course of the operation. Under other circumstances no change can be detected by percussion or auscultation in the course of the operation. It may be that the level of the fluid has not been altered, or the lung may not have expanded at once because of a condition of atelectasis. In such a case, while at first there may be no modification, on the next day it will be noticed that the dulness has disappeared. In other cases the lung expands rapidly, the pulmonary resonance and the vesicular murmur return, but on the following day the percussion dulness and the absence of the vesicular murmur reappear. The fluid has not been reproduced with prodigious rapidity. There is simply congestion of the lung, which has come about progressively and slowly, without the usual accompaniment of bronchial hypersecretion. Should the bronchial hypersecretion be profuse and threatening, the sovereign remedy is morphine, subcutaneously. This arrests both cough and expectoration. For the intense congestion, dry cups and scarifications; very exceptionally, wet cups will be of service. The changes that take place in the level of the fluid vary, and are not always evident. The rapid expansion of the lung may displace the fluid that remains and cause it to appear at a higher level. On the other hand, in case of rapid decongestion of the lung, the level of the fluid may fall rapidly

to the lowest portion of the pleural cavity. Sometimes the level of the effusion falls progressively. This is the most fortunate course. In other cases the level of the fluid remains nearly stationary for an indefinite period. Indeed, when the effusion has existed for a long time, the pleura becomes accustomed to the condition; therefore, an effusion should not be permitted to remain in the pleural sac longer than three weeks. Finally, the fluid may reaccumulate. This is most apt to take place when efforts have been made to remove all of the fluid. In such cases dry cupping and scarifications, blistering and diuretics should be employed; but digitalis should not be administered. In subacute cases purgatives and diuretics (nitre and acetate of potash) should be given. A treatment worthy of consideration is that with sodium chloride. The patient should be placed on a dry diet, and the chloride of sodium administered every two hours in teaspoonful doses. By this means, a considerable increase in the quantity of urine is obtained, with a return of the appetite and the bodily forces, and a rapid absorption of the fluid.—*La Médecine Moderne*, No. 11, 1891. (Ibid., September 5, 1891, p. 271.)

AFFECTIONS OF THE DIGESTIVE SYSTEM.

APPENDICITIS.

At the Medical Society of the State of New York, on February 4th, 1891, Dr. Charles McBurney gave an elaborate review of his own practical experience in treating the disease surgically, and the deductions which he had drawn therefrom as to the indications for early laparotomy. He emphasised the fact that the earliest possible diagnosis, and frequent examination of the patient, might properly be demanded of every physician and surgeon who was called to attend a case of appendicitis. Clearly defined rules, which would guide safely in all instances to a decision as to when a case of appendicitis might be safely treated conservatively, could not be laid down. A general description often, but not always, applicable, was the best substitute he could offer. The diagnosis having been made in a given case, the treatment should be directed to insuring absolute rest and controlling periperistalsis and retroperistalsis. As a local application over the cæcum and appendix, cold was by far the best. Anodynes should not be given to the point of masking the symptoms, and were possibly better avoided altogether. If nausea disappeared within twelve hours, if at the end of the same period tenderness on pressure had not increased, if the temperature remained normal, or had not risen

to 100° F. in the mouth, if the pulse was not accelerated, or but slightly so, and if the patient moved in bed with ease, the case was probably a mild one, destined to recovery. If at the end of twelve hours more this state of things still obtained, the chance of favourable ending was enhanced. If during the succeeding two days no tumour had formed and the symptoms had all improved, or some had improved while others had remained stationary, the case might be considered as practically safe, although complete rest should be enjoined. Again, in other cases the temperature would be higher, the pulse full, and the nausea considerable ; still these symptoms might not increase in severity, and the indications for conservative treatment would be clear. In these latter cases a short interval of twelve hours or more would usually develop signs of improvement, or of the cessation of advance, or of the advance of the symptoms. If signs of improvement had appeared, medical treatment would be continued. If the symptoms had merely ceased to advance, the decision would be postponed till another visit, to be made after a short interval, the medical treatment being in the meantime continued. If the symptoms had become more marked, then the question of immediate operation arose. In all of those cases which showed well-marked signs of increasing disease, the question of an operation should be deliberately and carefully discussed, and, in the opinion of the speaker, the operation should be done. It was not best to wait for strong evidence of perforation or peritonitis. It was not satisfactory to wait till the pulse became rapid and weak and the respiration anxious. No one could name the signs of impending perforation. When spreading peritonitis was discoverable, the peritonitis had already spread. If the peritonitis had passed beyond the wall of an abscess, then the abscess had already ruptured. If marked distention of the abdomen was waited for, section might demonstrate septic paresis of the gut, a condition from which the speaker had never known a patient to recover. Such indications were conditions which it would be wiser to anticipate. It might be laid down as a rule, with few exceptions, that the indications of advancing disease could be clearly made out by the end of thirty-six hours, provided that the diagnosis had been made early, and followed up by several careful examinations. Advancing disease with significant symptoms at this period offered the necessary indications for operation. The speaker then more minutely considered the various symptoms, both subtle and pronounced, which should be observed by physician and surgeon, as bearing upon the important question of operative interference. (New York Medical Journal, February 14, 1891, p. 193.)

Appendicitis, Chronic Relapsing.—Resection of Appendix during the Quiescent Stage of.

Weir (*Annals of Surgery*, vol. xiii., No. 5), after a careful study of the reported cases of operation upon the appendix vermiformis during the intervals of attack, sums up his ideas upon the subject as follows:—(1) That the final outcome of the review of these cases has been that the large majority of recurrent attacks are due to catarrhal appendicitis, which, though to an unknown degree capable of producing explosive and serious peritoneal inflammation, yet generally, from the lumen of the tube being previously shut off from the cæcum, limits correspondingly the chances of fecal or severe infection of the peritoneum. (2) That the simple catarrhal appendicitis can be suspected when the recurrences are frequent—that is to say, more than four or five times, as in the acute processes this is seldom exceeded—and when such attacks are not of a severe type, nor of greater duration than a week, and particularly so if there be no appearance of a distinct tumour. (3) In such cases delay in operating may be encouraged to a reasonable extent, at least until it is indubitably proven that the invalidism is a confirmed one. Out of five cases seen by Weir in the last year for recurrent attacks of appendicitis, in three, of the above-described simple form, it was advised to wait till the next acute attack presented itself as a further justification of surgical interference; but this did not occur in any of these. In the two others, from the persistent invalidism or the severity of some of the attacks, an operation was advised. (4) Where a tumour is present in the quiescent stage, or has been decidedly felt after the acuteness of the attack has passed off, more urgency is present, as it indicates, it is believed, either an accumulation of noxious contents or of ulceration within the appendix, or an already present small perforation. It is in such cases that Mackenzie says that we can expect, if an acute process is subsequently set up, that it will be a circumscribed rather than a general suppurative peritonitis. The frequent conjunction, in the collected cases, of adhesions with the severer forms of the catarrhal appendicitis with retained secretions or with minute perforations, seems to corroborate this view. (5) That as the diagnosis of the separate condition of simple catarrhal appendicitis and its complications of distention from retained fluids and of ulceration, are not at present to be differentially diagnosticated, and as it has been shown that each case can give rise to dangerous conditions, recurrences of severity and frequency should hereafter mean that an exploratory laparatomy should be resorted to on the general principle of this being of less risk than the disease itself. (American Journal of Medical Sciences, July, 1891, p. 91.)

GALL-STONES.—Their Origin and Treatment.

The discussion upon gall-stones at the Medical Congress at Wiesbaden, was opened by Professor Naunyn, of Strasburg. He remarked that different views were held as to their origin. According to some they form when the bile is saturated with stone-forming material, cholesterin and bilirubin; or the formation takes place from the precipitation of these substances due to alteration in the chemical constitution and reaction of the bile. These views are not supported by the fact that the percentage of cholesterin in the bile is very constant, and not in any way affected by food changes. It is likewise found in the blood, usually in much larger amount than the bile can contain. Both cholesterin and bilirubin deposit are furnished by the biliary passages, and the chemical alteration described by Thudichum have not been confirmed. In old age the disorder has few symptoms, and remains often unrecognised. In younger individuals 5 to 6 per cent. or even 10 to 12 per cent. of all bodies are said to suffer from gall-stones, and the nearer one approaches old age the oftener are they found. Before thirty they are rare, after sixty 25 per cent. of the cases occur. In women they occur five times as often as they do in men, and this may be explained by pregnancy, tight lacing, &c., causing stasis in the flow of bile. Atony may account for the frequency in old age. Gall-stones arise rather from an affection of the epithelium of the bile passages. Recent forms of stone are small and rough, often with a central cavity filled with cheesy matter or fluid. Deposits from the bile take place later. First a layer of bilirubin forms similar to an egg-shell, and the cholesterin is laid down later as a rule. Frequently carbonate of lime is added subsequently, and the stone becomes very hard. A diseased condition of the epithelium of the gall-bladder is always present, called by Meckel "stone-forming catarrh," although desquamative angiocholitis is a better term. The clinical appearances of the disease may be divided into regular typical cholelithiasis and the irregular atypical forms. The latter often develop into carcinoma and the prognosis is therefore bad. With regard to treatment, so-called solvent remedies have no real basis. Poisonous substances are administered and find their way into the bile in such small quantities that their presence is with difficulty detected. A similar judgment may be pronounced upon the action of cholagogues, regarded as having an important influence upon the treatment. A well-mixed meal induces a larger flow of bile than any medicinal remedy. The excretion of bile ought rather to be mechanically helped by the wearing of suitable clothing. Antiseptics, such as salicylic acid, &c., are of little use, as indiscretion of diet readily leads to an attack; the food ought

to be attended to. Carlsbad salt acts favourably, probably by the excitation of peristalsis. Surgical treatment holds out many possibilities of relief, from the position of the gall bladder.—*Berlin. klin. Wochenschr.*, No. 15, 1891. (The Practitioner, August, 1891, p. 134.)

GASTROSTOMY.—Hahn's Method of Performing.

Dr. Eugene Hahn describes his method of performing gastrostomy by fixing the stomach in the eighth intercostal space. He first did the operation in June, 1887. Since then he has performed eight operations by this method. These compare very favourably with the seven cases performed by Fenger's method. The operation is performed by making an incision parallel to and half an inch below the margin of the ribs in the fore part of the eighth intercostal space; a second incision is made in the eighth intercostal space, close to the junction of the eighth and ninth intercostal cartilages, in an oblique direction from above downward. The parietal peritoneum is punctured at this point by forceps or knife, and enlarged by spreading forceps. The thumb and index-finger of the left hand are introduced into the first incision, and the stomach sought for at a point corresponding as nearly as possible to the fundus. This is grasped by dressing forceps and drawn through the eighth intercostal space, until the stomach projects half an inch beyond the skin. If some days are to elapse before opening the stomach, it is fastened to the skin with sutures which pass through the serous membrane only; but if an immediate opening is necessary the sutures must go through the whole thickness of the stomach. By experiments on cadavers Hahn found that there was no danger of wounding the diaphragm if the incision were made between the eighth and ninth costal cartilages. The advantages are: (1) A small, contracted stomach is found with great certainty, and can be fixed with less dragging. (2) The adhesion seems stronger and more sure than when the abdominal incision is made, and the contents of the stomach do not come into contact with the parieties to the same extent as in older methods. (3) Nutrition is better established, because the food is introduced at some distance from the pylorus; and (4) no obturator or other means of closing the opening is needed afterward, because the proximity of the cartilages prevents the fistula becoming larger. (New York Medical Record, March 28, 1891, p. 373.)

HEMORRHOIDS.—An Ointment for.

Hydrochlorate of cocaine grs. xvj., sulphate of morphine grs. v., sulphate of atropine grs. iv., powdered tannin grs. xvj., vaseline ℥j., essence of rose q. s.; make an ointment and apply

to the affected parts after each movement from the bowels. It is necessary to have the discharges of soft consistence.—*Journ. American Med. Assoc.*, 1891. (American Journal Medical Sciences, July, 1891, p. 77.)

[See also article by Mr. H. W. Allingham, on the Choice of an Operation for Internal Piles, at p. 320 of this volume of the *Retrospect.*]

HERNIA.—Radical Cure of.

A considerable experience of the radical cure of hernia, strangulated and non-strangulated, in patients of all classes, ranging in age from one year to sixty years and upwards, leads me to submit the following conclusions, which will, I believe, in a general way, be accepted by the majority of surgeons who have had opportunities for acquiring extensive practical knowledge of the subject :—(1) In patients who are otherwise healthy, the operation for the radical cure of hernia, by competent hands, in properly selected cases, entails no more risk to life than is continually present in almost all persons suffering from rupture. (2) In subjects up to the age of twenty-five, or rather more, a perfect result may be often confidently anticipated, no truss being subsequently required under ordinary circumstances, provided that a proper operation be performed. (3) Between the ages of twenty-five and sixty-five a perfect result is attainable in some of the cases in which the rupture can as a rule be kept up by a truss ; in cases in which a truss fails to prevent the continual or frequent descent of the hernia a radical cure, in the true sense, may be accomplished in a few instances, and in the remainder the parts may be at least put in a condition which will allow the truss to act with safety, certainty, and comfort. (4) The greater certainty of a perfect result in the class of younger subjects is to a considerable degree explained by the natural tendency to closure of the ring from general contraction of the parts involved, in consequence of their resilience and developmental inclination. (5) In the class of older patients the probability of complete success is in directly inverse ratio to—(*a*) the age of the subject, (*b*) the chronicity of the rupture, (*c*) the size and rigidity of the hernial aperture, (*d*) the amount of bowel contained in the sac, and (*e*) the extent of the adhesion of the gut to the sac, omental adhesions to parts other than the bowel being no necessary bar to success. (6) The essential requirements of any properly devised operation are—(*a*) the provision of an effectual barrier across the internal aspect of the aperture through which the hernia escapes, and (*b*) the abolition of the hernial fossa in the peritoneum over the abdominal orifice of the canal. (7) In inguinal hernia the closure of the canal by

sutures after the sac has been dealt with is altogether of secondary importance to the requirements just indicated. It is, however, most desirable that the canal should be thus closed as far as possible, especially with the object of aiding the natural tendency to closure which exists in young subjects, and in all cases of recent hernia. Under any circumstances the sutures at least keep the parts approximated during the consolidation and adhesion of the structures designed to ultimately form the permanent barrier to the descent of the rupture. In femoral hernia the closure of the crural canal by sutures is unnecessary; moreover, from the nature of the parts and their anatomical relations, it can hardly be considered practicable in any useful sense. On the other hand, in umbilical hernia, which in some respects stands alone in its relation to the radical cure, the chances of a perfect result depend entirely upon the closure of the ring. (8) All operations which leave any portion of the sac or omentum actually engaged in the ring or canal, whether fixed by sutures or not, are, for obvious mechanical reasons, faulty in principle and defective in practice. (9) Having regard to the necessary uncertainty and inconvenience connected with the use of trusses, and bearing in mind the undoubted fact that any person who has been the subject of rupture in childhood is especially prone to develop hernia later in life, although the original rupture may have apparently undergone spontaneous cure after the prolonged use of instrumental pressure, the operation for the radical cure may be conscientiously recommended and practised upon sound surgical principles in the following conditions occurring in otherwise healthy people up to sixty years of age :—(*a*) Cases of hernia in young subjects; (*b*) herniæ in which trusses are entirely useless, partially effectual, or effectual only at the cost of pressure which is sufficient to cause pain or serious discomfort; (*c*) irreducible hernia; (*d*) cases in which the occupations or necessary amusements of the patient tend especially to strains of a kind likely to force the rupture down; (*e*) cases in which the continual use of trusses, whilst not actually painful, is irksome or intolerably inconvenient; (*f*) herniæ occurring in candidates who have been rejected, or anticipate rejection, for the public services on account of "physical defect"; (*g*) in all cases of strangulated hernia, occurring at any period of life, in which the bowel is sufficiently free from adhesions, and otherwise in a fit condition to be returned with perfect safety into the abdomen, the state of the patient being at the same time good enough to justify the necessary prolongation of the operation. (Mr. W. H. Bennett, The Lancet, September 12, 1891, p. 599.)

[See also articles by Mr. Bennett, at pp. 296-306; by Mr. Lockwood at p. 307; and by Mr. Lawson Tait, at p. 311 of this volume.]

Hernia, Strangulated.—Resection of Gangrenous Intestine by Senn's Method.

At the Clinical Society, on May 8, 1891, Mr. Arbuthnot Lane read a paper on two cases of resection of intestine by Senn's method. The first was a case of Littre's hernia occurring in a woman aged fifty-three. It was femoral, and situated on the right side. On exposing the sac it was found to be much inflamed, its contents stinking and pultaceous, and the knuckle of bowel in an obviously irrecoverable condition. Having thoroughly cleansed the bowel and sac, the abdomen was opened in the middle line, and the loop of intestine, whose segment had been strangulated, was drawn out from the abdomen, the constriction at the femoral ring having been previously divided. It was then seen that only a portion of the calibre of the bowel had been included in the sac, and that its condition was irrecoverable. Subsequent examination of the strangulated portion showed that, though there was no obvious perforation, nothing remained in many parts of its wall but the peritoneal coat. About three inches of the bowel, including the strangulated area, were excised, and the mesentery belonging to it ligatured. The divided ends of the proximal and distal segments of the intestine were closed by inverting their coats and by running along them a continuous Lembert's suture. Incisions were made in the convexities of the segments about three inches from their closed ends, and into these Senn's plates were introduced. The apertures were then brought accurately together by means of the silk ligatures. After this two continuous Lembert's sutures were applied to render the apposition of the plates more perfect, and a broad graft of omentum was placed around and fixed by means of several fine silk sutures. For a few days the patient was nourished by enemata, and later by peptonised milk. Twelve days after the operation she was enjoying a fish dinner. She experienced no pain or discomfort worth mentioning, and her abdomen remained soft and comfortable throughout. It was necessary to give her some opium for a few days after the operation to restrain a tendency to diarrhœa. She left the hospital three weeks and four days after the operation. The second case was in a woman aged fifty-five, who had suffered from a strangulated femoral hernia for five days before her admission. She was very collapsed, and her abdomen was much distended. It was at once apparent that she could not stand any very prolonged operation. The sac was much inflamed, and contained a quantity of pus and fæces, and a perforated loop of small intestine. This was ligatured and carefully cleansed, the constriction being then divided. The abdomen was opened and the damaged loop drawn out. About four inches of bowel were

excised, and the ends closed and the plates inserted. It was then found that the proximal gut was very rotten, and the sutures attached to the plates tore through the softened bowel frequently. Finally, the plates were brought together in much haste, as the patient had become moribund, and a graft of omentum was attached. Mr. Lane regretted very much that he had not time to remove a further portion of the proximal bowel, but the patient's condition rendered any further delay impossible. She lived five days and two hours, the bowel yielding two hours before her death, which resulted from the escape of the intestinal contents into the peritoneal cavity through a small slough in the proximal bowel. Mr. Lane urged that the following treatment should be adopted in future :— (1) that in cases where strangulated loop of intestine was gangrenous or ulcerated, the proximal and distal portions of the intestine should be short-circuited by means of Senn's plates, the proximal portion being at the same time relieved of much of its contents. If the condition of the patient were such as to permit of further operative interference, and provided the adhesion of the intestine to the neck of the sac and its vicinity were not too extensive, the damaged loop should be resected at the same time, otherwise it should only be incised and freely drained. (2) That, as a very large proportion of cases of strangulated hernia died from obstruction after herniotomy, owing to the strangulated loop not recovering itself sufficiently to allow of the passage of the contents of the bowel through it, in any case in which the condition of the strangulated bowel aroused suspicion in the mind of the operator as to the possibility of its not recovering, the abdomen should be opened in the middle line, and the condition of the damaged intestine, as to its transmissibility, fully explored. That if there were any doubt about it the intestine should be short-circuited ; and if the condition of the damaged loop were such as to suggest ulceration and subsequent perforation, it should be excised also. He considered the present mortality after herniotomy a disgrace to the surgery of the present day, and only to be obviated by more efficient and thorough treatment than that at present adopted. (Ibid., May 16, 1891, p. 1101.)

[See also article by Mr. Lockwood, on the Importance of Performing the Operations for Radical Cure after Strangulated Hernia, at p. 307 of this volume of the *Retrospect.*]

INTESTINAL STRICTURE, SECONDARY TO STRANGULATION IN A HERNIAL SAC.

At the Pathological Society, on April 7, 1891, Dr. Newton Pitt showed a specimen of this nature which had been obtained from the body of a woman, aged 43. Some time

before her admission she had had a difficult labour, and she said she had never been well afterwards. Eleven weeks before her admission she had over-reached herself on a chair, and the strain had caused her double herniæ to become irreducible. The following week, under the influence of ice, they were reduced, but the vomiting continued although the bowels were opened. Later she had colicky pains and the vomiting continued in spite of treatment. On admission the abdomen was found to be distended and lax. There was no tumour to be felt, but there was excessive tenderness in the right hypochondriac and epigastric regions. The bowels were open irregularly and blood was often passed in the stools. The diagnosis formed was either malignant disease of the large intestine or stricture of the small gut from the herniæ or from some adhesion due to the pregnancy. She got gradually weaker and died with perforation. At the post-mortem examination the small intestine was found to be distended and perforated at four feet from the cæcum. The cæcum was empty and so were the last four feet of the ileum. Above this there was a stricture, where the intestine had been caught in the hernial ring. At the stricture and above it the gut was ulcerated. There was no trace of tubercule in the intestine, though there was fibroid phthisis in the apices of both lungs. Strangulation leading to stenosis and stricture was very rare, and the author referred to the only two cases that he had been able to find recorded. The president mentioned an unpublished case in which an old cicatrix from a hernia had caused marked constriction in the small bowel. (British Medical Journal, April 11, 1891, p. 803.)

PANCREATIC CYST.—Successful Treatment by Laparotomy and Drainage.

At the Royal Medical and Chirurgical Society, on June 9, 1891, Dr. G. Newton Pitt and Mr. W. H. A. Jacobson read the following case:—B. McG., aged 21, was kicked in the abdomen in 1886, since when he had been liable to attacks of abdominal pain. He was admitted in May, 1889, with jaundice and severe abdominal pain and vomiting. On examination a globular tumour was discovered in the epigastric region, over part of which the note on percussion was dull; but this area of dulness was variable. In June the tumour was aspirated, and half a pint of alkaline, opaque, greenish fluid, of sp. gr. 1015, and containing albumen, was drawn off. The jaundice diminished, and the patient improved sufficiently to be able to go home. At the end of July the patient was readmitted, the pain, the jaundice, and the tumour having all recurred. The globular tumour now occupied the umbilical and epigastric regions, extending rather to the left of the middle line, moving

with respiration, and lying behind the stomach, as shown by the varying note on percussion, and by the disappearance of the dulness when the stomach was distended artificially with gas. On August 17th the tumour was again aspirated, and eight ounces of alkaline fluid, sage green in colour, were removed. This contained eleven grammes of albumen per litre, a large amount of tyrosin crystals, no copper-reducing substance, and no bile. It was therefore clear that the tumour was a pancreatic cyst. The patient was very emaciated, the cyst rapidly refilled, and the patient's condition became so critical that Mr. Jacobson performed laparotomy on the 22nd. An incision three inches long was made over the tumour an inch and a half to the left of the middle line. The stomach was with some difficulty pushed up under cover of the liver, the greater portion of the omentum was pulled out and removed, and the rest was sutured round the edges of the wound. The two layers immediately below the stomach were scraped through, and a very thin tense cyst was exposed. Thirty-six hours later the patient's pulse was very rapid and feeble, and his condition most precarious, owing to hemorrhage into the cyst, which made it so tense that it was necessary to lay it freely open. He steadily improved from this time, and was able to get up a month later, being discharged cured. With the exception of Annandale's case this was the first instance in Great Britain in which the correct diagnosis had been made previous to operation. The authors said that Senn's papers in 1886 and 1887 were the foundation of all knowledge about these cysts. The symptoms of these cases were discussed, and also some surgical points of interest noted.

Mr. Pearce Gould had had two cases of cyst of the pancreas which he had operated on. In the first case, in which the cyst was in the head of the pancreas, the opening never properly healed, and ultimately malignant growth set in around it. In the second case the cyst was in the tail of the pancreas. The pain was so severe that, although the patient had been but recently confined, an operation was considered imperative. After opening the abdomen, Mr. Gould turned up the transverse colon and the omentum, and then came down on the cyst, which was crossed by a large vein. He then aspirated the cyst, enlarged the puncture, and passed his finger into the cyst. He was then able to make his finger bulge the abdominal wall below the left twelfth rib, where a second opening was made, through which a large drainage tube was inserted. The patient made a good recovery, and he had brought her to the Society for the inspection of Fellows. Mr Jacobson, in reply, paid a warm tribute to the ability and originality of Dr. Senn. (Ibid., June 13, 1891, p. 1284.)

PERITYPHLITIS.

J. Simon maintains (*Rev. des Mal. de l'Enf.*, October, 1891) that perforation of the appendix is always preceded in children by a long premonitory period. At first constipation is the chief or only trouble ; the stools are hard, sometimes covered with slime ; the cæcal region is tense, but little if at all painful ; after an evacuation, which may be sudden and copious, it is lax. Later, perhaps after several months, subacute inflammation of the cæcum is set up ; there is thickening and a dull heavy pain, which may impede walking and cause the child to assume an attitude suggesting coxalgia. Loss of appetite and other dyspeptic symptoms now become pronounced, with reflex disturbances, such as headache, depression, and coldness of the extremities. The wasting may be so great as to suggest tuberculous peritonitis, or the cerebral symptoms so prominent as to be the first to attract attention. Finally symptoms of acute perityphlitis or appendicitis develop either suddenly or gradually.

Simon believes that appendicitis is never primary, but always secondary to engorgement and inflammation of the cæcum ; he insists upon the importance of treating the symptoms in the early premonitory stage. Meat and vegetables should be given only as *purées* well cooked ; the quantity of food, especially at night, should be limited ; baths followed by general friction and massage should be used systematically. As gentle purgatives he recommends oil of sweet almonds combined with castor oil ; linseed (℥ ss), macerated in half a glass of sugared water combined with syrup of rhubarb ; occasionally he gives a purgative mineral water, or pills containing extract of belladonna and extract of henbane, of each 1 centigramme (about gr. one-seventh) ; two or three of these may be taken daily by a child of 4 years. Five cases of perityphlitis treated by incision have been recorded by V. Maudach (*loc. cit.*, p. 473). In three cases recovery ensued. In each of these the abscess was incised and the appendix resected ; in two of these the opening was made in the iliac region ; in the third the pus had passed backward and the incision was made in the lumbar region. In one of the cases which died laparotomy was performed while the patient was suffering from general peritonitis. In another case recorded by Shrenk (*Jahr. f. Kindhlkde*, xxxiii, p. 135), the patient, aged 6, became collapsed, with symptoms of perforative peritonitis on the fourth day of his illness ; an incision was made parallel to Poupart's ligament and stinking pus evacuated ; the appendix, which was infiltrated with pus, was removed. The patient died, nine hours after the operation, of diffuse suppurative peritonitis. (Supplement, British Medical Journal, November 7, 1891.)

PYLORECTOMY.

Mr. Jessett records a successful case of combined pylorectomy and gastro-enterostomy for cancer of the pylorus (see p. 291) and concludes his paper with the following remarks:—There have been, so far as I know, only six cases of pylorectomy reported as having been performed in Great Britain; five of these were operated on by the method of excising the pylorus and suturing the divided ends of the stomach and duodenum together, after the method practised on the Continent by Rydyger, Wölfler, and Bilroth. All these patients died within twenty-four hours of the operation. The sixth case was reported last year by Dr. Rawdon of Liverpool, who adopted a novel method and utilised decalcified bone plates to unite the divided ends of the stomach and duodenum. The operation was thus performed in considerably less time than had hitherto been occupied. The patient made an uninterrupted recovery. I have on several occasions pointed out the difficulties that attend the operation of pylorectomy performed by uniting the divided ends of the stomach and duodenum, on account of the exceedingly short piece of duodenum covered with peritoneum that we have at our disposal, and, further, from the necessary traction upon the stitches which must ensue. To overcome this I have advocated the method of performing the combined operation of pylorectomy and gastro-enterostomy by means of approximate plates. This operation has been successfully performed by Dr. Bull of New York. His operation lasted three hours, as he spent one hour in ligaturing the omentum with a number of chain stitches before dividing it. He has operated in two other patients unsuccessfully, one dying from faulty suture and the other from a surgical disaster. The case I am now reporting is the first in which the operation has been performed in this country, and the result is so brilliant that I am fully convinced that in the future it will be adopted by surgeons in all cases in which the diseased pylorus is sufficiently free from adhesion to neighbouring organs to allow of its removal. Morever, by adopting this method, growths of very much greater magnitude than have ever yet been interfered with may be removed. In those cases where the disease is so extensive and adherent that it would be quite unjustifiable to interfere with it, the minor operation of gastro-enterostomy should always be had recourse to, as not only will the patient's sufferings be considerably alleviated thereby, but also life will be prolonged. I have now performed this operation on five occasions. One patient is still alive and well upon whom I performed gastro-enterostomy eighteen months ago, and showed at the Clinical Society last April; another is getting about and able to perform her duties twelve months after the operation; a third lived in comparative comfort for

nine months. All these cases were in extremis when they came under my care, and could have lived a miserable existence for only a few weeks. The after-treatment I think of importance. In all my successful cases I have commenced to feed at once. If the union is perfect, as it should be, there can be no more harm in introducing warm water or peptonised milk than in the presence of the gastric secretions which are continuously being poured out; in fact, by diluting these I am sure the patient experiences considerable relief, and at the same time the strength is being maintained. (The Lancet, October 24, 1891, p. 923.)

PYLORUS.—Hypertrophy of, in an Infant.

At the Pathological Society of London, on October 20, Dr. Newton Pitt showed a specimen of hypertrophy of the pylorus in an infant seven weeks old. The child was well till three weeks and a half before its death, when it commenced to vomit, and it had constipation. Under Dr. Goodhart's care this was relieved for a time, but, in spite of the most careful dieting, the vomiting returned and continued until its death. At the inspection the stomach was empty, but it retained its shape owing to the density and hypertrophy of its wall. The pylorus formed a mass 1 in. long and $\frac{5}{12}$ in. thick, formed of hypertrophied muscle. The duodenum was bent sharply on the pylorus. The bile-duct and the intestinal canal were otherwise normal. The hypertrophy of the gastric wall indicated that there had been some partial obstruction at the pylorus, but no cause beyond the flexure could be discovered. It was most improbable that this flexure was of any material importance. The explanation of the case was therefore obscure, and Dr. Pitt was not aware of any similar case having been recorded. (Ibid., 1891, p. 931.)

RECTAL CANCER.—Operative Treatment of.

In a brief but very excellent *résumé* of this subject, Thorndike (*Boston Medical and Surgical Journal*, vol. cxxiv., No. 19) reviews the methods of operation for malignant disease of the rectum. From the study of a large number of statistics he finds that excision of the rectum from below gives a mortality of about 15 per cent., and that about 10 per cent. of the cases which survive the operation are permanently cured. Only those cases in which the examining finger in the rectum easily reaches the upper limit of the disease are subject to operation from below.

Kraske, by approaching the seat of disease from behind, instead of from below, has greatly extended the possibilities of complete extirpation of cancerous disease, even when the bowel is involved high up. By enucleation of the coccyx and the

removal of a small portion of the lower part of the sacrum, he secures a large opening which affords ample opportunity to view the rectum and to work upon it. If the anal portion of the bowel is involved, and the disease is not very extensive, a resection is readily performed. The two ends of the bowel may then be brought together in front, the posterior opening being left to be closed by secondary operation. Or the following plan, devised by Hochenegg, may be adopted: The upper segment of the bowel may be telescoped through the lower, and may be held in this position by a double row of sutures, one row above the anus and the second row about the margin of the anus. If the anal portion of the gut has been removed, an artificial anus must be formed. In this case the bowel involved is brought out through the sacral opening, the wound being allowed to heal with a drainage-tube packed into it. The sacral anus is provided with a pad made by Leiter, which does its work so thoroughly that patients are exceedingly comfortable while wearing it. (American Journal of Medical Sciences, July, 1891, p. 93.)

Rectal Cancer.—Rose's Operation for.

Dr. Maass, together with an account of those various modes of operation for this disease in which the bowel is reached after removal of coccyx or part of sacrum, records six cases of Rose's operation, in which the sacrum is exposed and divided transversely by bone forceps as high as possible in the great sacro-sciatic notches. The spinal canal is opened and the cauda-equina divided, but from these lesions no evil results follow, probably from the crushing produced by the forceps, closing the open canal. The access thus obtained is naturally very free, and permits extensive operations on pelvic contents. The six recorded cases were :—(1) Extirpation of rectum and amputation of prostate for carcinoma; (2) Carcinoma of rectum and sacrum, &c.; (3) Carcinoma of rectum and sigmoid flexure; (4) Carcinoma of uterus and vagina; (5 and 6) Carcinoma of uterus. In the last two uterus and ovaries were removed.—*Deut. Zeitschrift fiir Chirurgie*, 32 Band, 3 u. 4 Heft. (Edinburgh Journal, November, 1891, p. 485.)

STOMACH.—Cancer following upon Ulcer of.

That such a combination occurs has been proved by the observations of Hauser, Lebert, Zenker, Leube, and others, and is now generally admitted, but that this is after all of rare occurrence is shown by the analysis given by Kollmar (*Berl. klin. Wochenschrift*, 1891, p. 120). To the list given by this author I might add two more cases; one, a patient under the care of my colleague Dr. Leech, who was admitted at the

Infirmary with all the signs of cancer of the stomach—great emaciation, persistent vomiting, a distinct tumour in the epigastrium, and a dilated stomach. The gastric juice was found free from hydrochloric acid. The history showed that eight years before the patient had suffered a good deal from epigastric pain and had had several attacks of hæmatemesis. From this Dr. Leech concluded that the gastric cancer had developed from the previous ulcer, and the post-mortem examination showed the presence of an oval ulcer at the pylorus which had caused the stomach to be closely adherent to the pancreas, and from the one border (the one nearer the cardia) a large cancerous mass had developed which caused thickening and infiltration of the adjacent wall of the stomach. The other case, somewhat similar to the above, and where the correct diagnosis was made during life, was under the care of my colleague, Dr. Steell. Here, too, the gastric ulcer, when the symptoms of cancer had fully developed themselves, showed the absence of hydrochloric acid. (Dr. Dreschfeld, Medical Chronicle, July, 1891, p. 254.)

Stomach.—Differential Diagnosis between Ulcer and Cancer of.

Kollmar says that in the great majority of cases the diagnosis between ulcer and cancer of the stomach is easily made, but that in not rare cases it may be difficult. In some cases the course of ulcer of the stomach is without striking symptoms, and the disease is perhaps first discovered at the autopsy, or makes its presence known by sudden profuse hæmatemesis or by a perforative peritonitis. Cancer of the stomach may also exceptionally exist without peculiar characteristic symptoms, the only symptoms being a steadily progressing marasmus and profound cachexia, without any other recognisable cause. Usually, however, pronounced digestive disturbances, pain in the region of the stomach, and vomiting, with or without admixture of blood, point with certainty to serious disease of the stomach; but whether it is ulcer or cancer must be determined by other considerations. The points to be considered in the differential diagnosis of the two diseases are, the age of the patient, the character of the pain, the character of the bleeding, the degree of acidity of the gastric juice, the duration of the disease, the condition of the nutrition of the patient, and the presence or absence in the gastric region of a palpable tumour. As regards age, gastric ulcer is most frequent between the ages of fifteen and twenty years; but it is not rare in old persons. Cancer of the stomach is most frequent between the fortieth and sixtieth years of life, eighty-two of Kollmar's one hundred and eighteen cases occurring during this period.

Kollmar's statistics of one hundred and eighteen cases of cancer seen in the last twenty years at the medical clinic at Tübingen, give an average age of fifty years. Localised pains, "wound pains," are characteristic of gastric ulcer, but they are not present in all cases, and are found in gastric cancer in the stage of ulceration. Diffuse pains, dyspeptic discomfort, and cardialgia, are common to both diseases. The pain in gastric cancer is usually less intense than that in gastric ulcer. Hæmatemesis varies greatly in character and quantity in both, but generally profuse hemorrhages are more frequent in ulcer. Absence of hydrochloric acid from the gastric juice is not an absolutely certain sign of the presence of cancer. A negative reaction is obtained in some cases of amyloid degeneration of the gastric mucous membrane, in cancer of the duodenum and œsophagus, and in poisoning with acids; and the reaction is frequently negative in gastric catarrh, in atrophy of the gastric mucous membrane, and in persistent fever. A temporary absence is not rare in gastric catarrh and dilatation of the stomach. In the latter diseases the reaction may be obtained by repeatedly washing out the stomach. Kollmar reports a case of this kind. A decidedly positive reaction speaks with considerable but not absolute certainty against the diagnosis of gastric cancer; while a negative reaction, because it occurs in other diseases of the stomach, should at least not be regarded as characteristic of cancer. The duration of the disease is of great importance in the diagnosis. Gastric ulcer runs a very chronic course, frequently lasting years; it may get well and subsequently recur. The course of gastric cancer is different, as it is very exceptional for it to last longer than two years, and usually death occurs much sooner. A preceding history of stomach trouble lasting for years, getting well for a time and then relapsing, is against the diagnosis of cancer even in old persons. Cancer sometimes, but very rarely, develops in the scar of an old ulcer. Kollmar has been able to find only fourteen cases of this kind reported in the literature upon the subject. Details of cases by Dittrich, Meyer, Lebert, Heitler, Platow, Rosenheim, and Kulcke are given. It is not reasonable, therefore, to pay too much attention to these exceptional cases in the diagnosis. Both ulcer and cancer may both be present in one patient. An important diagnostic point is the condition of the patient's nutrition. Great and early emaciation and cachexia occur in the great majority of cases of gastric cancer, whereas in ulcer the nutrition is often relatively good. But when the ulcer has persisted a long time, and the stomach has become dilated, and frequent vomiting and hemorrhages occur, the picture of the disease is very much like that of cancer. A sign, surpassing all others in diagnostic importance, is a palpable

tumour in the stomach region, which is almost always present in cases of cancer. It may be simulated by scar tissue about an ulcer, by a sacculated peritoneal exudate, by an hypertrophied pylorus, or by a tumour of a neighbouring organ. In such cases watching for the growth of the tumour leads to a correct decision, though in some cases increasing atrophy of the abdominal walls, by making the tumour more readily palpable, has made it appear to grow larger. Reinhard has collected sixteen cases of simple ulcer of the stomach with tumours. In six cases the tumour was caused by an hypertrophied pylorus from cicatricial stenosis ; in six it was the result of adhesions between the stomach and other organs, caused by the ulcer, and in part also by encroachment of the ulcer itself upon these organs ; in three cases there were foreign bodies in the ulcer ; and in one case an encapsulated abscess. All the sixteen patients were of an age at which cancers are common ; thirteen were women and three men. A tumour of the head of the pancreas may lead to error. In such cases as Reinhard's the duration of the disease is a great aid in the diagnosis. Kollmar concludes his paper by reporting three interesting cases. In the first case, a woman forty-eight years old had suffered from gastric ulcer for thirteen years. Subsequently a marked tumour and severe cachexia appeared, so that it was supposed that a cancer had developed. The autopsy revealed a gastric ulcer, but no cancer was found. The second case was that of a woman forty-six years old who had had disease of the stomach for twenty-three years. A diagnosis of gastric ulcer was made in spite of the presence of the gravest cachexia, a decided tumour, and the absence of hydrochloric acid in the gastric contents. This diagnosis was confirmed by the autopsy. In the third case, a woman fifty-three years old, with the gravest anæmia and cachexia, had had disease of the stomach for a great many years. The diagnosis was gastric ulcer without carcinoma, and was confirmed by autopsy.—*Berliner klin. Wochenschrift*, February 2 and 9, 1891. (Medical News, March 21, 1891, p. 335.)

TONGUE, CANCER OF THE.—Probable Predisposing and Exciting Causes of.

A probable family history of cancer was obtained in six cases out of the 104 :—(1) The patient's brother died from cancer of the tongue. The patient himself smoked cigars to excess, and there were indications of the tongue having been irritated by a tooth. (2) Patient's father died from cancer of the œsophagus. The patient himself was a smoker, and had carious teeth. (3) Patient's mother died from cancer. Patient was a moderate smoker. (4) Patient's uncle died from cancer of the lip. In

this case there was no apparent exciting irritation—the patient did not smoke—the teeth had disappeared long before the onset of the disease. (5) Patient's mother's uncle had cancer of the lip. Patient smoked a clay pipe. (6) A cousin of patient's mother died from cancer. Patient had irritating teeth. *Syphilis.*—Out of the 104 cases of cancer a definite history of syphilis was obtained in seven cases, and a doubtful history in seven. In five cases actual syphilitic disease preceded the epithelioma. In one of these cases the ulcer was first brought on by irritation of decayed teeth, and subsided under treatment with iodide of potassium ; three years later an epithelioma developed in the scar. *Exciting causes.*—Out of the 104 cases, in sixteen instances the patients distinctly traced the origin of the disease to some injury. (1) In five cases the tongue had been bitten. (2) In three instances the disease originated in dyspeptic ulcers. One of these patients was a glass-blower. (3) The repeated irritation of a simple ulcer with caustic gave rise to the disease in one case, and in another the scar left after the application of creasote was the site of the growth. (4) In five cases a definite history of repeated laceration of the tongue by carious teeth was obtained. This was well marked in the case of the youngest patient, a woman aged twenty-five years. (5) In one case the irritation of a plate of false teeth was the assigned cause. *Smoking.*—In the 104 cases a note as to smoking or non-smoking was made in seventy-nine. Of these, sixty-two were smokers, of whom forty-one habitually smoked clay pipes, and thirteen are described as "very heavy smokers." In some cases it was reported that the disease began on that side on which the pipe was usually held. In thirty-three cases the existence of carious teeth is mentioned as well as the habit of smoking, and in the fifteen cases in women two occurred in smokers. (The Lancet, May 9, 1891, p. 1034.)

[See also articles by Mr. W. Whitehead, on Excision of the Tongue for Cancer, at pp. 277 and 281 of this volume of the *Retrospect.*]

Tongue, Cancer of the.—Use of Opium in.

There is a subject in connection with cancer of the tongue which is constantly and painfully being brought under our notice, and that is, the singular view held by a large section of the profession, that in cases of cancer the means of relieving pain are limited by the maximum dose of any sedative authorised by the British Pharmacopœia. It is a constant experience to find that a patient suffering incessant and intolerable agony is ordered the paltry dose of a grain of opium at bedtime, and it is the rare exception to find sedatives administered on lines proportionate to the amount of suffering. In contrast to this I

may mention one of my own cases. A gentleman suffering from cancer arrived at the stage when he began to suffer pain, and he commenced with a quarter of a grain of morphia, which at first gave relief; by degrees this dose had to be gradually increased until he eventually took as much as thirty grains three times daily. This kept him entirely free from pain, without at any time interfering with his intellectual interest in his daily surroundings. The total amount of morphia this patient consumed during the twelve months preceding his death amounted to 3512 grains. He also inhaled during the last four days of his life five pounds weight of chloroform, and my firm belief is that this patient would have died much sooner had not this sedative treatment been adopted from the first. (Mr. W. Whitehead, Ibid., p. 1034.)

AFFECTIONS OF URINARY AND GENERATIVE SYSTEMS.

CYSTITIS IN WOMEN.

According to Gaubet (*Archives de Tocologie et de Gynécologie*, January, 1891), the treatment of cystitis in the woman comprises: 1. Urinary antisepsis; 2. Medical treatment; 3. Medico-surgical treatment; and lastly, true surgical procedures. An antiseptic condition of the urine is best produced by the administration of salol, which, under several experienced observers, has given excellent results. The borate of sodium, according to Terrier, has given rise to gastric troubles, while the benzoate of sodium and benzoic acid have been proved to be inefficient in producing the desired effect. Bazy having tried salol, found that the drug is very well borne, even by the most delicate and rebellious stomach, in doses of one and a half drachms, although one-half to one drachm is generally sufficient. This occasionally, not always, causes a diminution in the pain and smarting during micturition. The elimination occurs generally on the first day, but may be delayed twenty-four hours, and it may continue during one or two days, and even more, after the stoppage of the drug. The cases in which salol acts most efficaciously are the purulent catarrhs of the bladder, and in such cases it should be given in doses of from fifteen to thirty grains. Salol does not act, however, to any appreciable degree upon suppurations of the urinary passages. Antisepsis of the urinary passages, finally, is completed by observing perfect antiseptic measures in regard to the instruments which are used. Boiling water is generally sufficient to disinfect all metallic instruments. Should the bladder require washing out, it should be done

with sterilized instruments ; and the fluid used should be a solution of boric acid or of dilute silver nitrate. In patients in whom the entire organism has become infected, it is necessary to prevent the infection from becoming aggravated by suppressing the cause as far as is possible. This requires a careful investigation into the condition of the bladder, the ureters and the kidneys. Secondly, elimination of the poison by the natural emunctories should be facilitated ; by the skin, through the aid of sudorifics ; by the kidneys, by means of revulsives over the lumbar region and large quantities of diluent drinks. It is also necessary to destroy the poison in the system by means of quinine, and to increase the resisting powers of the patient by the use of tonics. To repeat, antisepsis of the urinary passages comprises the administration of salol in half-drachm doses daily for two or three days before the operation, intra-vesical douches of boric-acid water (3 parts to 100), and the disinfection of the instruments employed. The medical treatment of cystitis includes primarily injections of morphia. Barley-water, linseed tea, and other diuretics will calm the pains attendant upon micturition, by freeing the urine from its irritating properties. The mineral waters have little action in the treatment of painful cystitis. Rest is an important element in the management of these cases. Opium, chloral, bromide of potassium, and belladonna should be given for the pain, and purgatives and enemata for the relief of the constipation. (Medical News, March 21, 1891, p. 337.)

DIABETES.—Albuminuria in.

The occurrence of albuminuria in diabetes has been known for a long time, but its frequency is a point authorities differ upon. Sir Alfred Garrod found it in about 10 per cent. of the cases : Von Dusch in nearly 25 per cent. ; Dr. R. Schmitz, of Neuenahr, in a recent paper puts it at a much higher figure. Of twelve hundred cases of diabetes in which the urine was examined as to the presence of albumen, in no fewer than 824 was it found in quantity varying from a trace to as much as 0·9 per cent. There is as much difference regarding its significance. The opinion was once current that the appearance of albumen in the urine gave to the prognosis a most grave aspect, and even now the view that the prolonged polyuria and continuous irritation of the kidneys may develop a parenchymatous nephritis is held to some extent. Frerichs doubted this, and was inclined to look upon the existence of complications such as tubercle, cardiac disease, and arterio-sclerosis as the cause. Both Frerichs and Senator regarded the occasional œdema of the ankles and face as an expression of the general exhaustion, not the result of nephritis ; and the latter thought that the condition produced

by diabetes reacted upon the renal epithelium, which allowed the percolation of albumen. Schmitz does not regard albuminuria as of grave significance, provided there are no other signs of organic disease of the kidneys and no complications are present. Should nephritis be ascertained to exist, he thinks, it is most probably the result of some complication. He has seen patients live for many years who were known to have diabetes and albuminuria ; one case going on for fourteen years and in good health still. Dropsy is rarely observed, and cases described as dying of uræmia are probably confounded with diabetic coma. Of 206 patients suffering from diabetes of more than two years' standing, only four had albumen absent from the urine. With regard to the origin of the albumen, Schmitz holds that the long continued ingestion of large quantities of albumen plays a very important part, and added to this may be vesical catarrh, which occurs readily from the decomposition of saccharine urine.—*Berlin. klin. Wochenschr.*, No. 15, 1891. (The Practitioner, July, 1891, p. 57.)

Diabetes.—Milk Diet in.

In diabetes the milk cure requires to be used with care, and the cases for its use must be selected, for some patients may be injured by the insufficent nutriment which it affords, while others are greatly benefited by it. The cases in which it answers best are, I think, not those of pure diabetes, but rather those of gouty glycosuria, more especially those in which glycosuria is attended by albuminuria, and where the low specific gravity of the urine, after fermentation, leads to a suspicion of contracted kidneys. In such cases, and also those of gouty kidney where the urine is free from sugar and has a low specific gravity with a trace of albumen, a diet in which milk forms the chief or only ingredient tends to ward off spasmodic dyspnœa or the uræmic condition which so frequently occurs from imperfect elimination in old gouty cases. (Dr. Lauder Brunton, British Medical Journal, June 20, 1891, p. 1324.)

Diabetes.—Milk in.

When we come to the practical clinical side of the matter, we find that milk, because of the 4 per cent. of milk sugar it contains, has been steadily forbidden to the diabetic by the great majority of clinicians. The treatment of diabetes by skim milk, which is proposed by Dr. H. B. Donkin, need, perhaps, not be discussed here. It has no doubt a good deal to recommend it in the fact that the proportion of fat to proteid in a milk diet, even in skim milk diet, is larger than it would be in almost any other diet, and this is an undoubted advantage. The weak point, however, of the diet is the fact that the carbo-hydrate of

milk is milk sugar, which is not a desirable element in diabetic diet. When we come to consider, however, the very severe restrictions that have to be imposed on the diabetic in the matter of diet, we cannot help feeling some amount of regret in having to proscribe the valuable proteid and fat of milk because of the presence of the milk sugar. By putting together a few facts that have been long known about milk, I have been able to arrive at a solution of the problem. Instead of getting rid of the sugar from the proteid and fat of the milk, which I failed in doing, it was evidently possible to perform the reverse process, and to separate the proteid and fat of the milk from the sugar; in a word, to precipitate the casein and fat of the milk, to filter them off, allowing all the sugar to run away from them, and then to redissolve the washed precipitate in a solution of the normal salts of milk, to which a little alkali had been added. The process is a very simple one. Take a quantity of milk, dilute it with three or four volumes of water, to which 1 to 2 parts per 1,000 of acetic acid have been added. This produces a precipitation of all the casein and fat of the milk. The precipitate is allowed to settle for a few minutes, and then strained through a piece of calico. The precipitate is then washed, and redissolved in a 1 per cent. solution of the following mixture of salts:—

Sodium chloride	11.5 parts	Magnesium citrate	4.4 parts
Potassium chloride	9.9 ,,	Dicalcium phosphate	8.0 ,,
Monopotassium phosphate	13.8 ,,	Tricalcium phosphate	9.6 ,,
Dipotassium phosphate ..	10.0 ,,	Calcium citrate	25.5 ,,
Citrate of potassium	5.9 ,,	Calcium oxide	5.5 ,,
Dimagnesium phosphate ..	4.0 ,,	Sodium carbonate..	40.0 ,,

A trace of saccharin may be used to sweeten the milk, and the salt solution is best used at about blood temperature, and the casein and fat precipitate is to be mixed up with it, as in making cocoa, to the desired thickness. We obtain by this easy method a very fairly palatable and entirely sugarless milk. The precipitated casein and fat can also be dried without undergoing alteration, and then used for the preparation of the milk. (Dr. A. E. Wright, Ibid., April 11, 1891, p. 788.)

[See also Dr. Wright's article on the Carbo-hydrate Element in Diabetic Diet, at page 162 of this volume of the *Retrospect.*]

LITHOLAPAXY.—General Statistics of.

In my work on Litholapaxy, published in 1886, I gave the results of 321 operations for stone in the bladder—128 litholapaxies and 193 lithotomies—performed by me down to the beginning of that year, with 14 deaths, and showed that the introduction of litholapaxy into my practice had had the effect of reducing the mortality from operations for stone in the

adult from 18 to $5\frac{3}{4}$ per cent. Since that time I have in three papers published in the *British Medical Journal*, including the present paper, given full details of a further series of 400 cases of stone in the bladder. There were amongst these 342 litholapaxies—in 221 adult males, 5 adult females, 115 male children, and 1 female child, with 4 deaths; 54 perineal lithotomies—amongst 3 adult males and 51 male children—with 1 death; and 4 suprapubic lithotomies—in 2 adult males and 2 male children—with 1 death. That is to say, 400 operations with 6 deaths, or a mortality of $1\frac{1}{2}$ per cent., a result which we can scarcely expect to improve on whilst we extend the operation to almost hopeless and moribund patients. It is a result unequalled in any other large and important operation in surgery, and entirely due to the introduction of Bigelow's method. The grave has now closed over that great surgeon, whose name is imperishably connected with the modern operation for stone and the word "litholapaxy," which he introduced to denote and distinguish it. (Dr. Freyer, Ibid., May 9, 1891, p. 1008.)

[See also article by Dr. P. J. Freyer, on the Present Position and Scope of Litholapaxy, at page 330 of this volume of the *Retrospect.*]

PROSTATIC HYPERTROPHY.—Radical Treatment.

K. Eigenbrodt, of Bonn (*Beiträge zur klin. Chir.*, No. 8, 1891), reports five cases in which Prof. Trendelenburg operated for the radical cure of prostatic enlargement, and expresses in the following propositions his views as to the value of this treatment: (1) It has been shown by experience that a radical operation is possible in almost every case of obstructive enlargement of the prostate. Such treatment consists in suprapubic prostatectomy in which all those portions of the enlarged prostate which protrude into the bladder are, if possible, removed; (2) the prospects of prostatectomy are better the earlier the operation is performed, and operations done early and before the development of cystitis are to be recommended in all cases in which the surgeon may avoid setting up inflammation of the bladder by the operation itself; (3) even in far advanced cases much relief may, under certain circumstances, be afforded by the operation, and the patient may regain the function of voluntary micturition; (4) patients who have been apparently cured by the radical operation are apt to be subsequently affected with persisting weakness of the bladder and accumulation of residual urine; (5) in obstructive hypertrophy of the prostate the hindrance to the flow of urine does not consist so frequently as is generally supposed in a valvular occlusion of the internal meatus of the urethra by a

prominent lobe of the gland, or by a displaced portion of the vesical wall. The hindrance is more frequently the result of a regular and general enlargement of the vesical portion of the prostate associated with the formation of a cul-de-sac in the bladder. Should the surgeon be unable in the latter class of cases to remove all the portion of the enlarged prostate which projects into the bladder, he should attempt to promote a free discharge of urine by making a deep wedge-shaped incision at the posterior border of the internal urethral orifice. (Supplement, British Medical Journal, November 7, 1891.)

URETHROTOMY.—External, in Retention of Urine due to Stricture.

In certain cases of retention of urine due to stricture of the urethra, that form of external urethrotomy usually known as "Cock's operation" is a most valuable method of giving relief to the symptoms. Briefly described, the operation consists in opening the urethra behind the stricture, and immediately in front of the prostate, through an incision in the middle line of the perineum, the surgeon being unassisted by any guide beyond his left forefinger, introduced into the rectum, and placed upon the apex of the prostate gland. Through the perineal opening a tube is introduced into the bladder, where it is allowed to remain for a few days. Though devised by Cock for cases of impermeable stricture complicated by urinary fistulæ, where the perineal tissues are indurated and gristly as the result of repeated irritation from the presence of extravasated urine, the operation is a very valuable one in cases of retention due to stricture, where attempts at catheterism and the ordinary treatment by opium and a warm bath have failed, and when the following conditions are also present, viz. :— (1) *Cases where the urine is purulent, and in a foul and offensive condition.*—Under these circumstances the alternative methods of treatment, suprapubic aspiration of the bladder and puncture through the rectum, are liable to be followed by septic inflammation and suppuration in the cellular tissue behind and above the pubes, or between the bladder and rectum, if escape of a drop or two of toxic urine subsequently occurs in either of these situations. Not only are these complications avoided by the performance of Cock's operation, which provides a free opening in the most dependent position, but the cystitis is also relieved by the bladder drainage, which is maintained so long as the perineal wound remains unhealed. (2) *Cases where suprapubic aspiration (which is always preferable to puncture through the rectum) has only been followed by temporary relief to the symptoms.*—If, after an interval of eighteen or twenty-four

hours, the patient is again suffering from retention, it is in my opinion better to proceed at once to perform Cock's operation rather than to repeat the aspiration. The operation is also valuable in those cases of stricture where evidences of commencing extravasation of urine are present, affording as it does an outlet in the most dependent position through which the urine will drain away. Another advantage of the operation is that the stricture is temporarily left in a state of complete rest, being free from the irritation caused by the frequent and ineffectual attempts at micturition. Consequently, it will generally be found that in the course of a week or ten days the stricture has become pervious to instruments, and can then be dilated in the ordinary way. This is not, however, always the case, for in spite of the rest afforded by the bladder drainage, the stricture occasionally remains impervious to instruments, and the patient is consequently subject to the inconvenience of passing his urine through a permanent perineal fistula. (Mr. Southam, The Medical Chronicle, April, 1891, p. 1.)

URINE.—Ammoniacal Changes in.

At the Pathological Society, on November 3, 1891, Mr. S. G. Shattock read a communication on the action of proteus vulgaris and of pyococci on urine ; he also gave an explanation of the deposit of phosphates from urine on boiling, and made remarks on the amphoteric reaction of urine. He said that an assertion commonly made was that the conversion of urea into carbonate of ammonia always depended on the action of living micro-organisms. Pasteur's researches on this matter were well known, and his observations were afterwards confirmed and extended by Lister. It appeared certain from their work that nothing which healthy urine contained could bring about its own decomposition, and it was well known that in large hydronephrotic sacs the urine would remain clear and sweet for years. He showed three specimens—one of urine which had been sterilised and which remained clear for three months, one which had been exposed for a few minutes to the atmosphere and which had undergone an ammoniacal change, while another showed the so-called acid fermentation. Although one organism was usually credited with being the active cause of the decomposition of urine, namely, the micrococcus ureæ, yet others had been found to produce a similar change. For instance, one bacterium and two forms of micrococci had been isolated, and at least five others had been described. Two methods of prosecuting a research into this subject were possible : (1) to isolate from the urine the organism growing in it and to identify it, and (2) to inoculate urines with other

bacteria not usually found there and see if they would produce ammoniacal fermentation. Another question was whether the hydrolysis of urea could be brought about by any method akin to the change produced in starches and albumens by superheating them. He showed that if urine were boiled for some time ammonia would be given off and a gradual hydrolysis of the urea would take place. If neutral urine were boiled a precipitate of normal phosphates would occur, and if an acid urine were boiled for a sufficiently long time, the same result would follow. He took a quantity of urine which had been filtered and sterilised in flasks, and into these he inoculated active cultures of germs which had been grown in broth. In fully acid urine the common proteus vulgaris could not grow. Urine which was faintly acid, if heated discontinuously for four days, became amphoteric, which was due to the development of free ammonia in it, and in this solution the proteus vulgaris grew slowly to a certain extent. He had also tried both forms of streptococcus; the streptococcus bovis induced a faint ammoniacal reaction in the urine in which it was grown. But with the pyococcus albus and aureus the most marked results were obtained; in forty-eight hours the pyococcus aureus produced an abundant fermentation with phosphatic deposit. These observations had an important bearing on some questions in surgery, for it had been usually held that for decomposition to occur the micrococcus ureæ must gain entrance from without, being introduced by instruments or travelling up the urethra by means of the ropy mucus sticking in its canal. But these experiments showed that a suppurative pyelitis might induce an ammoniacal fermentation, and cause a precipitation of ammonio-magnesian phosphate. The production of carbonate of ammonia by this fermentation was not of itself of so much importance in disease, but it served rather as an index of the suppuration or putrefaction that was going on; it was on these latter that the danger of the case depended. The carbonate of ammonia might excite inflammation, and then the proteid products from the inflamed mucous membranes were added to the urine, and these furnished the toxic albumoses and alkaloids, which were elaborated by the agency of the micro-organisms. The possibility of an indirect pyogenic infection through the blood was not to be lost sight of, and in this way a simple catarrhal pyelitis might become suppurative, or a simple catarrhal cystitis purulent. He did not know at precisely what temperature the hydrolysis of urea occurred, but it certainly went on slowly at 60° C. A proper fermentation did not occur without the action of microbes, though a certain amount of decomposition of an unimportant kind might. (The British Medical Journal, November 7, 1891, p. 994.)

GENERAL SURGERY, AND AFFECTIONS OF THE BONES, JOINTS, &c.

ABSCESS.—New Treatment of.

The treatment of chronic or cold abscess by the method of aspiration and injection of antiseptic solutions, such as iodoform dissolved in ether, is a favourite plan of some French surgeons, and is the one usually adopted for some time past in the wards of M. Verneuil, now the senior professor of clinical surgery in the Paris Faculty ; but it appears to have been reserved in this country to Dr. Piéchaud, of Bordeaux, to have adapted the method with success to the treatment of acute inflammatory abscesses. Instead of the time-honoured free incision of the most dependent part Dr. Piéchaud aspirates the abscess, after which he injects a solution of 1 in 1000 of corrosive sublimate. For the past ten months he has invariably adopted this method in his hospital practice, and, he declares, with marked success. Even if the skin over the seat of the abscess be thinned and undermined, this is no bar to the procedure, for which he claims as advantages that it is less painful, leads to more rapid healing, and leaves no traces of scar. (Paris Correspondent of The Lancet, April 18, 1891, p. 907.)

ACID NITRATE OF MERCURY.—Its Use as a Caustic.

I believe that to the very liberal use of this valuable agent I owe much success in cases which had proved disappointing under other measures. I use it for nearly all unhealthy-looking sores, and wherever an inflammatory process was thought to be likely to prove infective to other parts. Thus boils, inflamed acne, almost all forms of tertiary syphilitic disease of skin or mucous membrane, most cases of common lupus, as well as all varieties and degrees of phagedænic action, come under its influence. Where it is desirable to produce a considerable destruction of tissue, as in cases of cancer of the skin, then I prefer either the actual cautery, or, still better, the chloride of zinc paste. For nævi, unless very small, I prefer the actual cautery. The solution of the acid nitrate of mercury, a syrupy fluid prepared according to the British pharmacopœia, and renewed once in every two months or so, always stands on my window-table. With it is a tray of glass brushes of various sizes, and some rolls of the thickest blotting-paper. The brush used should be pointed in cases in which it is desired to pencil out dilated blood-vessels, or to touch small spots such as those of acne. In these cases a very minute quantity of the caustic is all that is desirable, and the blotting-paper should be applied to

the part after half or a quarter of a minute, according to the effect it is wished to produce. If by accident a larger quantity has been applied than was intended, or there has been any running of the acid, an instant application of the blotting-paper will prevent any ill consequences. I wish to make it particularly clear that I am in the habit of using the acid with a very light hand indeed when it is employed for such diseases as acne of the face, and the prevention of scar is important. For I have more than once had patients who had been treated by my friends according to what was supposed to be my plan, who complained bitterly of the scars which had been left. I always explain to patients beforehand that small scars are inevitable, and I believe I generally succeed in leaving no larger ones than had been expected. The efficacy of the treatment in cases of acne, if the patient will attend regularly once a fortnight for three or four times, is often very remarkable. For large ulcers, for patches of lupus, and for the tubercles and patches of syphilitic lupus, a good broad-ended brush is used, and the acid freely applied. Under these circumstances it is allowed to have two or three minutes to act on the part before blotting-paper is used ; or, if the structures be thick, it may be painted over several times at intervals of a few minutes. In many cases, I have known the acid thus used cure, at a single application, spreading patches of syphilitic lupus which had long resisted internal treatment. In using the acid inside the mouth, for sores on the tongue, or on the cheek, or in the throat, I employ a large, broad brush with a long handle, and always have ready in the left hand for immediate use a roll of blotting-paper, long enough to easily touch the pharynx. Sometimes, but not very often, it is necessary to avail oneself of the hand of an assistant to depress the tongue or hold the lips out of the way. The part to be touched should be always first dried by means of the blotting-paper, and with certain parts, as, for instance, the sides of the tongue, it is a convenient plan to hold the paper under the sore to be touched before applying the brush. In this way all risk of the acid running may be obviated. It may be asked—Is not this caustic treatment a very painful one? and the reply must be that when it is necessary to use it freely it is painful. It will cause pain which will last twelve or twenty-four hours, and will in some instances even give the patient a bad night. I have, however, very rarely thought it necessary to order an opiate, and if the patient is fairly informed beforehand that pain must be expected, there is rarely any complaint. Every now and then I have been told that certain patients have avoided my consulting-room for fear of having caustic applied, but to set against these there are many who are only too well

pleased to have got rid of a troublesome malady at the expense only of a few hours' pain. (Mr. Hutchinson's Archives of Surgery, October, 1891, p. 169.)

DUPUYTREN'S CONTRACTION.

The main conclusions arrived at may be stated as follows :— 1. There are two forms of disease comprised under the name "contraction of the palmar fascia," the one traumatic in origin, dependent upon common inflammatory changes in the integumental and fascial structures, and occurring at all ages ; the other unassociated with obvious traumatism, tending to multiplicity of lesion, and almost confined to middle and advanced life. 2. The latter condition, true "Dupuytren's contraction," is not, strictly speaking, a contraction of the palmar fascia, but consists of a chronic inflammatory hyperplasia, commencing in the subcutaneous connective tissue and involving secondarily the palmar fasciæ and the deep fibres of the corium. The morbid bands are for the most part formed at the expense of the normal tissues. 3. It does not appear to be connected primarily with pressure or friction of the palm by tools or other objects employed in manual occupations, but is probably caused by a specific infective agent which effects its entrance through epidermic lesions made by the finger-nails or otherwise. 4. It is almost essentially a disease of middle and advanced age, more common in men than in women, occurring in all classes, tending to progress slowly through a course of years, and to return after operation. 5. It is connected with a special diathesis, inherited or acquired, which cannot yet be expressed in any known terms : but neither gout, rheumatism, rheumatoid arthritis, nor any other of the ordinary constitutional ailments has been shown to have any causative relation to the disease. 6. It appears to be almost, if not quite, unknown in certain parts of the East, as in India and Japan. (William Anderson's Lectures on Contractions of the Fingers and Toes, The Lancet, July 11, 1891, p. 59.)

[See also articles by Mr. Anderson on the Treatment of Dupuytren's Contraction, and on Hammer Toe, and on the Symptoms and Anatomy of Dupuytren's Contraction, at pp. 260, 265, and 270 of this volume of the *Retrospect.*]

FEMUR.—Separation of Lower Epiphysis of.

At the Philadelphia Academy of Surgery, on February 2nd, 1891, Dr. J. H. Packard showed specimens of separation of the epiphysis of the femur, taken from a boy nine years of age, who was brought to St. Joseph's Hospital in April, 1889, having had his leg caught in the wheel of a carriage behind which he was clinging. At first sight the appearance was that of a luxation of the knee. A closer examination, however,

showed an oblique wound across the posterior part of the knee-joint, the diaphysis of the femur, stripped of its periosteum, presenting. The epiphysis was turned over on top of the diaphysis, and held in that position by the heads of the tense gastrocnemius muscle. The patella was not materially displaced, being still in relation with the joint, but was tilted up by the action of the quadriceps muscle. The vessels had not been torn, but had slipped around the end of the diaphysis, the blood in the artery being coagulated, so that there was a probability of the limb becoming gangrenous. The damage to the soft parts was so extensive that an attempt to save the limb was not considered proper. Amputation was therefore performed, about an inch and a half of the shaft being removed. The boy made a perfect recovery. There are several interesting points in connection with separations of the epiphysis of the femur. In the first place, this epiphysis is unlike all the others in regard to the mechanical disadvantage at which it is placed. The speaker has collected sixty-eight cases of this injury. There is often a tearing-off of a small portion of the diaphysis. In the case just described there is an extremely small portion of the diaphysis torn from the inner side of the shaft, which does not, however, alter the character of the injury. Separation of the epiphysis is not at all analogous to fracture of the femur, although it might simulate a fracture in cases in which there is a separation of a large splinter of bone. This might resemble fracture low down in the femur. In a fracture of this kind there is crepitus. The deformity is easily reduced, and does not recur, but in cases of separation of the diaphysis there is no crepitus, because there is no contact between the separated portions of bone. In almost all, even the simple cases that have required operation, or when an examination has been made shortly after the accident, the periosteum has been found stripped from the surface of the shaft. The reason for this is plain. During extreme extension the epiphysis is strongly held by the ligaments ; then when separation occurs there is violent thrusting downward of the diaphysis through a sort of button-hole in the periosteum, which is thus stripped off. In one case the periosteum is said to have been torn off as high as the trochanter. A distinguished French surgeon advises in these cases that the shaft of the femur be resected to a point as high as the separation of the periosteum. If this were carried as high as the trochanter, it would of course make the limb useless. If reduction is possible, the periosteum soon becomes re-adherent, and the nutrition of the bone is not materially interfered with. Amputation has been done in twenty-eight of the sixty-eight cases reported. In a number of cases there were other injuries causing death in a short time, and in many

others the diagnosis was not satisfactorily established. The speaker thought this was the twenty-seventh instance in which the accident was produced by catching the leg in a carriage-wheel. One case was recently reported by Owings in the *New York Medical Journal* in which amputation was not required. The difficulty in reducing the epiphysis, due to the contraction of the heads of the gastrocnemius, could be relieved by dividing the heads of the muscle. Whether the case would do well with a large open wound and section of the muscle, he could not say. In this case there certainly would have been difficulty in keeping the bone in position without resection. (Medical News, March 21, 1891, p. 339.)

FINGERS, CONTRACTIONS OF THE.—Due to Splint Fixation.

The affection described by Volckmann as muscular paralysis of ischæmic origin is now seldom met with. It is a result of prolonged immobilisation of fore arm fractures by any form of apparatus that interceps the free circulation of blood through the muscles and nerves of the part. When the splint is removed the hand is found painful, dusky, and swollen, the fingers are bent like claws, and any attempt to extend them causes great pain. Volckmann believed that the nerves in these cases have preserved their power of conduction, but that the muscular fibres are structurally injured and have lost their excitability. The lesion is, however, seldom of a permanent character, and the function may generally be restored by systematic active and passive movements, with massage, and if necessary the use of a galvanic current. Its existence is a reproach to surgery, since a careful observation of the hand and fingers during the use of splints will always give due warning of the danger. (Mr. William Anderson's Lectures on Contractions of the Fingers and Toes, The Lancet, July 18, 1891, p. 110.)

[See also articles at pp. 260-273 of this volume of the *Retrospect;* also p. 93 of this *Synopsis.*]

GANGRENE, SENILE.—Treatment of.

Heidenhain (*Deutsche med. Woch.*, September 17th and 24th, 1891) gives the results of treatment in thirty cases of senile gangrene, many of them in diabetic patients; and draws attention to the importance of ascertaining whether, in addition to the arterio-sclerosis and atheroma, there is thrombosis of any artery in the lower limb. To such thrombosis the recurrence of gangrene after amputation is probably frequently due. He proposes to divide these cases of arterio-sclerosis and senile gangrene, especially in diabetics, into two groups, according to the etiology. The first group would

include cases in which gangrene sets in after some slight injury, where sclerosis, possibly assisted by the saccharine state of the blood, sets up gangrene by interfering with the circulation. To the second group are to be assigned those cases—probably more numerous than the first—in which gangrene, although apparently spontaneous, is in reality due to previous thrombosis of some artery in the popliteal space or in the leg. Heidenhain's experience in treating these cases leads him to make the following recommendations: Where the gangrene is limited to one or two toes, avoid surgical interference; when, on the contrary, the gangrene has reached the metatarsal region, amputate through the femur above the condyles, taking care to cut as small skin flaps as possible. Greater success attends such high amputation than where an operation is performed lower down. (Supplement, British Medical Journal, November 7, 1891.)

HAMMER FINGER.

Hammer finger is not a rare complaint, although less familiar possibly because much less troublesome, than hammer toe. It may be defined as an abnormal or permanent flexion of one or more digits, nearly always at the first or second inter-phalangeal joint, and unassociated with inflammatory or degenerative disease in the articular structures, or with any paralytic or spastic phenomena in the muscles. It is strictly limited in onset to the developmental period, but may manifest itself at any time between birth and adult life, and is possibly congenital in some instances. It is more common in girls than in boys. The digit most frequently attacked is the little finger, and the first inter-phalangeal joint is more often affected than the second. It is usually symmetrical. The contraction is slow, progressive, and painless, and becomes arrested spontaneously at any degree of flexion, but seldom goes beyond an angle of 90°. The joint cannot be extended by any ordinary force except in the earliest stage, and even then the bent position is immediately resumed after the cessation of the effort. Flexion, on the other hand, is complete and of fair power. No alteration is produced in the deformity by flexion of the wrist, a fact which proves that the main obstacle to extension does not lie in the tendons. There are no contracted fascial bands, and as a rule, the skin is normal, but occasionally a small longitudinal fold may be present in the angle of flexion. In rare instances the resistance to extension is capable of yielding suddenly with a spring-like action, and a similar movement recurs as the joint is replaced in the position of flexion. These cases are usually classed with the condition known as "trigger finger." The contraction also occurs in the

metacarpo-phalangeal joint, but very rarely attains a degree that causes it to attract the attention of patient or surgeon. It has been demonstrated that the permanent obstacle to extension of the contracted joint is to be found in the ligaments. There is no evidence of either muscular or nervous impairment or of any inflammatory changes in or about the joint ; the process of contraction is slow and painless, and the condition always originates and progresses to its maximum during the term of active growth. The treatment of hammer finger is a far less simple problem than that of hammer toe, because in the latter the sacrifice of the movements of the affected articulation does not sensibly impair the functions of the digit, while in the fingers an ankylosis of the first inter-phalangeal joint in the position of either flexion or extension would be more inconvenient than the ligamentous contraction. The measures available are (1) passive movement, (2) subcutaneous section of lateral ligaments, with or without tendon lengthening, and (3) amputation. In the milder cases a persevering use of passive motion will in time effect a cure ; but when the contraction has reached an advanced degree it may be impossible to make an impression by this means. We may then divide the lateral ligaments, and keep the fingers straight by means of extension splint, while the tendons are relaxed by flexion of the wrist, trusting to subsequent massage and passive motion, or failing this, to tendon lengthening (by a process described elsewhere), to overcome the resistance of the shortened muscles. Section of tendons within the theca is useless, because the divided ends do not unite. As a last resource, amputation may be demanded to remove a useless and inconvenient member. (Mr. William Anderson's Lectures on Contractions of the Fingers and Toes, The Lancet, July 18, 1891, p. 108.)

[See also Mr. Anderson's lectures at pp. 260-273 of this volume of the *Retrospect;* also pp. 93, 95, and 101 of *Synopsis.*]

OSTEOMALACIA.—Treatment by Castration.

Hofmeier (*Centralblatt für Gynäkologie*, No. 12, 1891) reports the case of a virgin, aged thirty years, who had osteomalacia of three years' standing, the disease being progressive at the time of operation, as shown by the presence of severe pains in the pelvic bones, inability to walk, and marked pelvic deformity. Menstruation regular and painless. Four weeks after removal of the ovaries the patient could walk without assistance, and the pains were much less severe. She received cod-liver oil and peptonate of iron ; six weeks later she felt quite well, had no pain, and could walk a long distance. The pelvic organs were normal. The ovaries were atrophied, as in a woman after the menopause, and presented a similar appearance microscopically,

only a few ovisacs being seen. The case was interesting, not only because the patient was a virgin (hence pregnancy could not be regarded as an etiological factor), and there was no disturbance of menstruation, or evidence of pelvic congestion. As regards the effects of castration under such circumstances the writer admits, with Fehlin, that it is impossible to give a satisfactory explanation. It may be due to some reflex action upon the vasomotor nerves supplying the nutrient vessels of the pelvic bones, the disease itself being regarded as a trophoneurosis of the bones directly dependent upon ovarian activity. This theory receives additional support from a similar case reported by Truzzi. Fehling has collected twenty other cases of castration for osteomalacia, in none of which was there a failure on the part of the operator to secure at least a temporary benefit. (The American Journal of Medical Sciences, July, 1891, p. 102.)

PAGET'S DISEASE OF THE NIPPLE.

At the Royal Medical and Chirurgical Society, on May 12, 1891, Dr. Thin remarked on the increased knowledge we had of this disease since the publication of the papers by Mr. Butlin and himself ten years ago. At that time it was the generally received doctrine that the disease was a true eczema, which eventually led to cancer of the breast. The view which he had advocated that the disease was not an eczema nor any form of recognised skin disease was soon afterwards confirmed, and was now universally accepted. The hypothesis which he had suggested that the destructive dermatitis was due to a change at the mouths of the ducts, essentially cancerous in its nature, although a long time might elapse before it led to proliferation of cancerous epithelium was, he held, although not proved by anatomical investigation, still one that had much to recommend it. The destructive agent, of whatever nature it was, was sufficiently powerful to destroy the epidermis and break up the connective tissue in the papillary layer of the skin—effects which were reconcilable with the hypothesis that the poison was cancerous. He considered the continued use of the term "eczema" objectionable, as possibly leading to delay in operative interference. He had recently examined the tissues in a patient of his own with the special object of detecting the appearances described as characteristic of psorosperms. He had found them absent. On examination of the preparations from his early cases, he had found all the characteristic appearances recently described, but saw no reason to consider that they were due to the presence of parasites, as he was able to trace them in an unbroken series of changes which took place in the cells of the epidermis, the first set of

changes being unmistakably in true epidermic cells, and the sequence up to the most developed appearances being continuous. Similar changes were found in other conditions, and he specially referred to drawings of cells in epithelioma in his paper in the fifty-ninth volume of the Medical and Chirurgical Transactions, which resembled in every respect the so-called typical psorosperms recently described. (The Lancet, May 16, 1891, p. 1097.)

Paget's Disease of the Nipple.

At the Royal Medical and Chirurgical Society, on May 12, 1891, Mr. Bowlby read a paper on Thirteen Cases of Paget's Disease of the Nipple, with special reference to the causation of the malady by psorosperms. He gave a short account of thirteen cases of Paget's disease of the nipple, and, after a brief review of cases already recorded, analysed those described by himself. A more complete description of the special clinical characters of the disease, as demonstrated by the cases detailed, was then given. The histology of the morbid tissues was described, and the observations of Messrs. Wickham and Darier as to the presence of bodies resembling psorosperms were commented on. The author remarked that bodies of the same nature as those described by the French observers were to be found in all the cases which formed the subject of the paper, and expressed the opinion that these bodies were probably psorosperms. The pathology of Paget's disease was then discussed ; and, after giving reasons for believing that all changes in the breast were secondary to those in the nipple, and were not in any way causative of the so-called eczema, the author expressed the opinion that the disease was parasitic in its origin, and then discussed the influence of the psorosperms in causing cancer. He concluded by expressing the opinion that there was no evidence that the cancerous growths in the cases under consideration were directly due to any specific action of the psorosperms, and gave various reasons for such a conclusion. (Ibid., May 16, 1891, p. 1096.)

SACRUM.—Resection of, in Intra-pelvic Operations.

A. Broca (*Gazette Heb. de Méd. et de Chir.*, No. 40, t. xxvii. p. 467) presents an interesting article upon preliminary resection of the sacrum in operations upon the pelvic organs. These operations are of two kinds: in one the resection is final, the bone being removed ; in the other, the resection is temporary, and the bone is restored after the operation. In the first operation, that of Kraske, a longitudinal incision is made in the median line from the middle of the sacrum to the anus.

The tissues are divided to the bone. The gluteal muscle and the sacro-sciatic ligaments are divided; and then with the chisel and mallet the lower left half of the sacrum is removed as far up as the third sacral foramen. The canal is not opened if the division of the bone is made somewhat to the left of the median line. This, however, is not a matter of much importance. The temporary resection, with an osteo-cutaneous flap, was proposed by Heinecke for cancer of the rectum, and has been performed by Hégar for a gynæcological operation. A Y-shaped incision is made over the sacrum commencing an inch and a quarter below and within the posterior inferior spine of the ilium and ending at the tip of the coccyx. The upper flap is left adherent to the posterior surface of the sacrum. The muscles and ligaments are separated from the bone, and the rectum is removed from the anterior surface. Then the sacrum is divided with a chain-saw along an oblique line the right extremity of which is between the third and fourth sacral foramina, the left extremity at the sacral cornu. When the bone has been divided the flap with the skin is raised and replaced at the end of the operation. MM. Lévy and Delbet have modified the form of the operation by making the bone-flap from the lower part of the sacrum cut transversely across. This has the advantage of preserving the insertions and the strength of the pelvic floor. By resection of the sacrum free access is obtained to the pelvic contents. The operation is indicated in cancer of the rectum, for hysterectomy, and for some cases of pelvic abscess; especially those which are separated from the general peritoneal cavity, and are not accessible for extirpation. (The American Journal of Medical Sciences, April, 1891, p. 414.)

SPINE.—Angular Curvature of with Paraplegia, Laminectomy for.

[Mr. W. Arbuthnot Lane concludes the narrative of two cases successfully treated by laminectomy with the following observations:]—I have now operated on eight cases, all of which were very bad subjects for operation, since they were very feeble, some having tuberculous disease in other parts as well. Of these, one died from hemorrhage from a polypus in the rectum while the spinal condition was progressing in a most satisfactory manner; one relapsed, and was only slightly benefited by operation; one has up to the present shown no improvement; while five are at this moment apparently permanently relieved of their paraplegic symptoms. Not one of these cases could have derived anything but harm from prolonged rest in bed, and the indiscriminate adoption of such treatment is obviously most iniquitous and unscientific. (The British Medical Journal, June 6, 1891, p. 1228.)

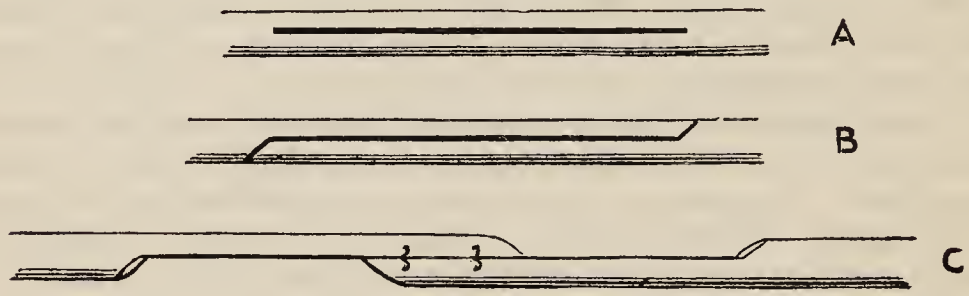
Spine.—Trephining the, for Paralysis due to Tubercular Disease.

Dr. Kraske believes that in most instances the paralysis results from the pressure of epidural exudation upon the spinal cord, and rarely from displacement of the bones or tubercular disease of the cord itself. This thickening and exudation can be removed by operation, which should, however, Kraske thinks, be done only in carefully-selected cases; his experience of the operation as a means of cure has not been encouraging. Kraske regards signs of pressure on the nerve roots as an important indication for the operation, pointing as they do rather to exudation than myelitis. Bladder symptoms he looks upon as indicative of severe pressure, such as, if left alone, would lead to rapid degeneration of the spinal cord, and their presence, therefore, would be justification in certain cases for operative interference. In all cases prolonged trial of extension is advocated; and as regards the operation itself, Kraske points out how frequently it must be impossible to reach the source of the disease when it originates in the vertebral bodies, and not in the arches. He does not find that more than temporary improvement follows the removal from the vertebral canal of the gelatinous and fibrous material, together with any sequestra that may be found, though the immediate results were very excellent. Records of four cases are embodied in the paper.—*Langenbeck's Archiv für Klin. Chirurg.*, 41 Band, 2 Heft, Berlin, 1891. (Edinburgh Medical Journal, May, 1891, p. 1068.)

TENDON-LENGTHENING.—A New Method of.

Mr. William Anderson describes a case of contraction of the fingers depending upon a trophic lesion of the ulnar portion of the flexor profundus, perhaps due to injury in childhood, in which after a fruitless attempt to improve the condition by passive motion and splint extension, neither of which was well borne, it was determined to lengthen the tendons by operation. On October 18th, 1889, the patient was chloroformed, and it was observed that the deepest anæsthesia caused no relaxation of the contraction. A semi-circular incision was made over the inner side of the front of the forearm just above the wrist, the convexity overlapping the tendon of the flexor carpi ulnaris, the horns reaching to a line midway between the radial and ulnar borders of the limb. The flap of integument and fascia was reflected towards the radial side, exposing the inner portion of the flexor sublimis. The tendon of this muscle going to the ring finger was then isolated, transfixed by a fine tenotomy knife, and split longitudinally for a distance of two inches. At each end of the fissure so made the tendon was divided in such a manner as to leave one-half of the split portion attached to

the proximal, the other to the distal, end of the tendon. (See Fig.) The tendon, a very slender one, to the little finger was similarly treated. The effect of this measure upon the contraction was very slight. The portion of the flexor profundus common to the middle, ring, and little fingers was then drawn out and divided after the same method, and the section was followed by immediate and complete extension of the digits, When the fingers were fully straightened, the ends of the divided tendons still overlapped each other to the extent of about a third of an inch. The overlapping portions of each tendon were then carefully sewn together by catgut sutures, the wound was closed and dressed antiseptically (without drainage), and the hand was placed upon a plaster-of-Paris splint; the wrist and fingers being moderately flexed, in order that no undue tension should be thrown upon the united tendons. Healing took place by first intention. At the end of a week the fingers were partially extended, and four days later the extension was



DIAGRAMS SHOWING METHOD OF TENDON LENGTHENING.
A, Tendon split longitudinally. B, Section completed by incisions at extremities of fissure. C, Divided tendon elongated and sutured.

made complete, the alteration of position on each occasion being effected without difficulty, and at the expense of little pain. In the middle of the fourth week after the operation a feeble power of flexion had appeared. The patient was discharged on Nov. 13th, twenty-six days after the operation. Two months later the condition had much improved, and the voluntary flexion, although still weak, was almost complete as to range. All the tendons had evidently united firmly. She was directed to wear an extension splint at night, and to practise active and passive movement at intervals in the daytime. At the end of a further three months the patient (who lived in Lincolnshire) came again to London. She had been growing taller in the interval, and said that the contraction had been gradually reappearing. On inquiry it was found that she had neglected her instructions as to extension and motion. Some slight return of the flexion had appeared in the ring and little fingers, and had since been steadily increasing, till it is now almost as great

as when she first attended. She has made no adequate effort to oppose the retrogression, but has almost entirely discontinued to use the affected hand. She is still, however, able to move the fingers freely at all the joints. She desires to undergo another operation ; but has been advised to obey the directions given to her after the first, and to wait until her growth is quite complete before any more active surgical treatment is undertaken. (The Lancet, July 18, 1891, p. 109.)

[See also Mr. Anderson's articles at pp. 260-273 of this volume of the *Retrospect;* also p. 96 of this *Synopsis.*]

THYROID GLAND.—McKulicz's Resection of.

This name has been given to an operation which is particularly suitable for cases of parenchymatous goître. The object of it is to remove the chief part of one or both lateral lobes and to avoid all risk of wounding the recurrent laryngeal nerves. At the same time enough thyroid tissue is left behind to carry on the function of the gland. The lateral lobe is first isolated as far as possible in the ordinary manner, the vessels being isolated, tied, and then divided. Then that portion of the tumour which is in contact with the front and sides of the trachea is freed by means of scissors, care being taken not to go too far back and thus injure the recurrent nerve. Eventually the whole tumour is attached only to the side of the trachea and œsophagus just where the inferior thyroid artery enters, and where it is in contact with the nerve. Upon the pedicle thus obtained a row of catgut ligatures is put and the rest of the tumour then cut away. A lump of gland about as large as a chestnut is thus left behind, in the angle between the trachea and œsophagus. Union takes place by first intention and the patient is well in a few days. (Mr. James Berry, The British Medical Journal, June 20, 1891, p. 1329.)

[See also article by Mr. James Berry, on Kocher's Operation for Removal of the Thyroid Gland, at page 247 of this volume of the *Retrospect.*]

TRIGGER FINGER.

Trigger finger, the *doigt à ressort* of French authors, may be defined as a peculiar defect in the motions of the digit, consisting, first, of an impediment which obstructs the movement of flexion or of extension, or of both, followed, if the motive force be continued, by a sudden cessation of the resistance, and a brusque, spring-like action that often bears a remarkable resemblance to that which accompanies the opening and closure of the blade of a penknife. The first observation was that of Notta in 1850. A finger attacked by this affection generally lies when at rest in a position of flexion, which by a

voluntary effort, or by passive force, may be overcome in the peculiar manner described in the definition, the resistance suddenly yielding with a trigger or spring-like action ; and the same phenomenon is usually but not necessarily repeated when the digit is again bent. In exceptional cases a reverse condition obtains ; the passive finger is kept in a state of extension, and it is during flexion that the trigger phenomenon is elicited. The movement may be merely inconvenient, or it may be more or less painful. The sign may be constant, accompanying every movement, or it may be intermittent, disappearing and recurring without any obvious reason. It is usually confined to a single finger, but it may be multiple. The digits most frequently involved are the middle finger, the ring finger, and the thumb, while the index and little fingers are relatively free, and the right side is more often affected than the left. It is rather more common in women than in men (in the proportion of three to two); and much more frequent in adults than in children, but may appear at all ages. The etiology is ill understood. In many cases an important influence, direct or remote, has been assigned to rheumatism ; in some the condition has been attributed to injuries of various kinds ; in others to occupations necessitating over-use of the digital articulations (as in sempstresses); but no cause has yet been recognised which can account for any large proportion of the examples. (Mr. William Anderson's lectures on Contractions of the Fingers and Toes, The Lancet, July 25, 1891, p. 162.)

[See also articles at pages 260-273 of this volume of the *Retrospect;* also p. 96 of this *Synopsis.*]

AFFECTIONS OF THE SKIN, ETC.

ANTIPYRIN IN SKIN DISEASES.

In a paper read before the Berlin Dermatological Society, Blaschko drew attention to the great value of antipyrin in diseases of the skin, more especially those accompanied by pruritus, many of which may be regarded as neuroses of the skin. He recommends it very strongly in the affection met with in children where urticaria like papules appear chiefly on the extremities, more especially at night-time, and lead not infrequently to definite itching nodules, called by some writers "prurigo," by others "lichen urticatus," or *urticaria papulosa.* In pure urticaria, where no digestive derangement can be made out, it is of great service, as well as in nervous pruritus and genuine prurigo. It acted well in erythema sudatorium, erythema nodosum, and peliosis rheumatica, especially where articular pains were present ; and the irritation of acute eczema was

considerably relieved by it. Blaschko quotes a severe case of pemphigus and one of lichen ruber in which all other remedies failed after steady trial, and where the distressing irritation was relieved by antipyrin and the patients recovered. He utters a note of warning against considering it a panacea for all skin diseases ; but believes that it is of much service where there is itching, although at the same time local measures ought not to be neglected.—*Berlin. klin. Wochenschr.*, No. 22, 1891. (The Practitioner, July, 1891, p. 59.)

CORNS AND WARTS.—An Application for.

A mixture of one part each of lactic acid and salicylic acid in eight parts of collodion is recommended as an excellent application to warts or corns, effecting their removal in a short time. (The American Journal of the Medical Sciences, October, 1891, p. 405.)

DRYING-IN LINIMENTS IN THE TREATMENT OF SKIN DISEASES.

Professor Pick, of Prague (*Prager Medicin. Wochenschr.*, Jahrgang xvi.), after referring to the gelatin preparations brought forward by him some years ago, calls attention to a new remedy with which he has been experimenting, namely, bassorin (obtained from tragacanth). This kind of gum differs from gum arabic in being almost insoluble, but swells up with water into a syrupy mass which permits of being smeared over and rubbed into the skin in a remarkably satisfactory manner, and drying in as a thin and delicate covering or film. The formula given consists of tragacanth 5 parts, glycerine 2 parts, water 100 parts, which makes the best consistence. It may be prepared hot or cold. According to the latter method, the finely powdered tragacanth is rubbed with water, the mass taking on a smooth syrupy or lanoline-like character. The application is, when first used, cooling to inflamed skin. As it dries in, a fine, smooth, dry covering forms, with, in the case of inflamed skin, a feeling of tension, which however is not painful, and in its results is beneficial. A variety of medicaments, both soluble and insoluble, may be added to the base, as in the case of the gelatine preparation and pastes. (Ibid., October, 1891, p. 429.)

GRANULOMA FUNGOIDES.

In the course of a Post Graduate Section, Mr. Hutchinson says: Granuloma fungoides or Duhring's neoplasm is an inflammatory disease of skin, chronic, and beginning like eczema. Immense masses of granulation tissue form ; and some of them may subside while others grow. The disease usually ends fatally

after a long duration, though it is not always malignant. Several portraits were shown illustrating iodide of potassium eruptions. Mr. Hutchinson remarked that he expected some cases of iodide rash had been mistaken for granuloma fungoides. In one case, of which a portrait was shown, it had been mistaken for syphilis. The patient was a man, æt. 26, who was admitted into the London Hospital. He died from exhaustion a few days later. On inquiry at the hospital in which the man had been treated, it was found that he had been taking iodide for a swelling in the groin under the diagnosis that it was syphilis. The eruption had soon appeared and had gone on steadily increasing, the specific being pushed under the impression that the disease was syphilitic. He lived for about a fortnight after the iodide was entirely left off, but no material change took place in his eruption. He was very feeble, and died of exhaustion. Mr. Hutchinson stated that there was a model in the Guy's Hospital Museum which presented a similar appearance to his own case. Some of the tubers were as large as plums. Acne due to iodide tends to run into tubers. Mr. Hutchinson also showed some portraits illustrating a peculiar eruption on the hands of a dark purple colour (the "plum juice" eruption), which was allied to granuloma fungoides. It tends to break down and ulcerate; but some cases get well. It has been described by Hebra under the name "sarcoma melanodes." Granuloma fungoides does away with the distinction usually drawn between inflammation and new growth. (Medical Press and Circular, March 25, 1891, p. 294.)

HAIR.—Superfluous Removal of.

Dr. E. O. Leberman offers the following formulæ, which, in his hands, have proved quite successful. (This formula is recommended by McCall Anderson):—℞.—Barii sulphidi ʒiss., Zinci oxide ʒvj. Mix with sufficient water to form a paste, apply for three minutes, and then wash off. For the removal of stiff, coarse hair, the formula of Neumann is servicable:—℞.—Calc. hydrat. ʒiss., Orpiment. ʒiij., Amyli ʒj., Aq. calcis q. s.; Ft. pasta. The paste should be spread over the parts from which the hair is to be removed as thick as the blade of a knife. The softened hairs should be scraped from the skin with a dull knife or ivory spatula, the parts washed with warm water, and afterwards thoroughly dried. A bland ointment should then be applied to the reddened surface. The length of time these pastes should remain upon the skin is best determined by the severity of their action. They both cause slight itching, which sensation is followed by an intense burning; when the latter begins the paste had best be removed. The effect of chemical depilatories can scarcely be more than

temporary, as their action can extend no deeper than the epidermis; the hair-bulbs remaining, a new growth will soon appear. Great care should be exercised in their application, and their effects should be carefully watched, for sometimes deep and painful ulcerations occur by their incautious use. However, they serve a purpose, and if properly applied will often leave the skin free from hirsute appendages which disfigure it. (The American Journal of the Medical Sciences, October, 1891, p. 407.)

ICHTHYOL VARNISH.

Unna has for some time felt the desirability of having a solution of ichthyol of considerable strength which would dry rapidly, would not irritate the skin, and would be soluble in water. After numerous experiments, he has found the following formulæ to fulfil all indications. In the preparation of the paste, some substance was needed to prevent the starch from being precipitated, and a solution of albumin made concentrated by gentle heat effectually hinders this deposition:—℞.—Ichthyol 40·0, starch 40·0, solution of albumin 1–1½, water to 100. The constituents must be incorporated in this order:—First, the starch is to be uniformly moistened with the water; then the ichthyol thoroughly rubbed in; and, finally, the solution of albumin mixed with the others. The other varnish is somewhat different. In it carbolic acid replaces the albumin:—℞.—Ichthyol 25·0, carbolic acid 2·5, starch 50·0, water 22·5. The ichthyol and carbolic acid are dissolved in the water by aid of heat, and with this an equal amount of starch is slowly rubbed up. These varnishes, when smeared on the skin, as on an acne, an acne rosacea, or a lupus erythematosus, dry in course of two minutes, and can be easily washed off without any irritation from friction. Thus they are preferable to the ichthyol collodion, being only inferior to it inasmuch as they do not exercise the same amount of compression which it does. They are, like it, not readily removed by the perspiration, as the zinc ichthyol jelly is apt to be, while they cause no soiling of the bed linen. They are likely to come into extensive use.—*Monatshefte für prakt. Dermatologie*, Bd. xii. No. 2, 1891. (Dr. Jamieson's Periscope, Edin. Med. Journal, July, 1891, p. 75.)

LUPUS OF THE MOUTH, PHARYNX AND LARYNX.

The frequency with which these lesions exist in association with skin lupus is not generally recognised, and as the matter is of some practical and pathological importance, it seems worth while calling attention to it. Its practical importance lies in this, that if not recognised when treatment by tuberculin is

resorted to, and the dose correspondingly modified, the constitutional disturbance produced by the injection may be such as to cause anxiety, and possibly the local reaction in the larynx may give rise to symptoms of obstruction where none previously existed, and commonly difficulty in swallowing will arise from the soreness produced in the passages by the local reaction. Lupus in these parts is very interesting pathologically, because the features of the disease are much less variable than those of lupus of the skin; interesting, too, as resembling those lesions of similar parts which are often spoken of as chronic tuberculoses. During the last three months thirteen cases of lupus have been admitted to the hospital for treatment, and through the kindness of my colleagues I have had an opportunity of examining all these, with the result that in six of them lupus has been found on either palate, pharynx, or larynx, sometimes on all three, though in only two were there symptoms pointing to implication of these parts. Although these cases were not selected in any way, it is probable that the proportion in which these mucous membranes were affected is considerably higher than generally obtains, for the reports of other observers, made on a larger number of cases, makes the proportion vary between 10 and 20 per cent. All are agreed, however, that females suffer more than males, and this is brought out to a singular degree in my cases: of the thirteen patients six were females and seven males: five of the females, but only one male had lupus of the oral and adjacent cavities. (Mr. Gilbert Barling, The Lancet, June 27, 1891, p. 1423.)

MOLLIN AS A BASE FOR OINTMENTS.

Julius Kühn (*Berliner klin. Wochenschrift*, 1890) directs attention again to the preparation made by Th. Canz, apothecary, of Leipzig, known as mollin, and recommends it as a base for ointments. The preparation was introduced a few years ago, and Kühn's recent experience leads him to regard it as valuable. Mollin is a 17 per cent. over-fatted soap, and as a base for ointments possesses many advantages over lard and the petroleum products in the treatment of many skin diseases, especially those running a subacute or chronic course, such as seborrhœa, acne, psoriasis, and scabies. On account of its soapy nature, it should not be employed in the acute inflammations. Some of the numerous advantages claimed for it by the author are that it is a clean remedy and can be easily removed. It keeps well for years, even in hot climates, and it mixes intimately with the various medicaments in common use, such as mercury, chrysarobin, sulphur, tar, resorcin, salicylic acid, &c. Rapid cures of psoriasis, acne, and other diseases are reported. (The American Journal of the Medical Sciences, May, 1891, p. 530.)

NAPHTHALINE AS A VERMIFUGE.

Dr. Mirovitch, in the *Mercredi Médical*, speaks of naphthaline as the best agent for expelling tænia. In his opinion it is superior to all other remedies, because of the certainty of its action and the absence of all toxic effect, for it is absorbed in but very minute amount by the gastro-intestinal mucous membrane. The dose for adults is fifteen grains, given when the stomach is empty and followed immediately by two tablespoonfuls of castor oil. Children may take from four to eight grains, and at the same time a tablespoonful of castor oil, flavoured with a few drops of essence of bergamot. During the two days preceding the administration of the drug the patient is to eat freely of salted, acid, and spiced foods. In all of the cases one dose of naphthaline was sufficient to expel the tapeworm, the head included, even in cases in which other drugs had failed. He has also found the drug most effective in the treatment of patients with ascarides. (Ibid., October, 1891, p. 405.)

PASTES AND PASTE-STICKS.

Lascar has contributed an article to the *Pharmaceutical Record*, January 5, 1891, giving the results of a vast number of trials with all the ointment bases, new and old, especially with the gelatine ointments and pastes of Unna. Many of the latter have as their base amylum and gum arabic, and Unna has found it serviceable to bring such pastes to a consistency so that they can be formed into sticks, and he is in the habit of incorporating in them a variety of medicaments, as iodoform 40 per cent., salicylic acid 10 to 40 per cent., resorcin the same, corrosive sublimate 5 to 10 per cent., oxide of sulpho-carbolate of zinc 20 per cent., or pyrogallic acid 40 per cent. These paste-sticks require to be moistened when applied to the skin. They are not to be confounded with the salve-sticks which resemble the well-known cosmetic sticks of French origination. Their consistency, however, is about the same as that of the ordinary cosmetic stick, and their base is spermaceti or wax with olive oil. The parafine oils are not suitable for these purposes. One word in regard to the gelatine unguents of Unna may be added here from the observations of Lascar. Being an entire novelty to him, he encountered no little difficulty in obtaining a superior article. He used the Cox gelatine and macerated it with cold water until it swelled, then heated it in the water-bath and added 10 per cent. of glycerine, then added a concentrated warm solution of Russian isinglass, in the proportion of 1 to 4 of the gelatine, the product being a glycero-gelatine that dried more quickly than any other combination experimented with by

him, and that left a firmer coating on the skin when applied directly theron. (Journal of the American Medical Association, February 21, 1891, p. 275.)

PEDICULOSIS PUBIS.

In a clinical lecture (*L' Union Médicale*, February 26th, 1891) on pediculosis pubis, Fournier very properly decries the treatment of this condition with blue ointment, inasmuch as this method is not only dirty and otherwise offensive, but it commonly gives rise to the so-called eczema mercuriale, and may also, through absorption, bring about moderate or severe ptyalism. Much preferable and equally efficacious are—an ointment of calomel, 1 to 20 ; baths of corrosive sublimate ; a lotion consisting of 400 parts of water, 100 parts of alcohol, and 1 part of corrosive sublimate ; and one consisting of 300 parts of vinegar and 1 part of corrosive sublimate, to be applied diluted with one or two parts of water. As to the removal of the ova, the same method is to be practised as in pediculosis capitis — that is, with washings of warm vinegar, slightly diluted, and subsequent combings. (The American Journal of the Medical Sciences, August, 1891, p. 204.)

PRURITUS HIEMALIS.

Corlett reports (*Journal of Cutaneous and Genito-urinary Diseases*, vol. ix.) several cases of this disease—the so-called frost or winter itch. The author's observations as summarized are in the main the experience of others : "1. That the state of the general health has no (?) appreciable effect upon the pruritus. 2. The local irritation of the clothing, although capable of aggravating the malady, is not of itself able to produce it. 3. Meteorological conditions appear to furnish the main etiological factor. These were most potent with a low temperature, low humidity, and the wind blowing from the north-west. The greater the velocity of the wind, *cæteris paribus*, the more severe the itching. 4. Pruritus hiemalis is not infrequently associated with other neuroses of the skin." The author places little reliance upon internal treatment, inasmuch as, with the possible exception of ichthyol, it proved negative. The most efficient local measures employed, which are in the main necessarily palliative, consisted of resorcin, ichthyol, and menthol lotions, the first-named being usually of greatest benefit. Change to a warm and humid climate, where also the temperature variations are but slight, is curative. (Ibid., October, 1891, p. 431.)

Pruritus.—Liniments for.

La Semaine Médical gives the following liniments for pruritus : ℞.—Pure resorcin 1 drachm, glycerin 2 drachms, water 4 ounces ; mix and label "To be used externally ;" or, ℞.—

Menthol 3 drachms, glycerin 2 drachms, water 4 ounces.—M. This is to be labelled "Use externally," and is to be shaken before using. Finally, the following mixture may prove of value: ℞.—Ichthyol 1 to 3 drachms, glycerin 2 drachms, alcohol and water of each 2 ounces.—M. Use externally. (Medical News, March 28, 1891, p. 358.)

Pruritus, Senile.—Treatment of.

In the treatment of senile pruritus Besnier employs the following solution:—℞.: Carbolic acid, 1 drachm; vinegar, 8 ounces. This is to be applied as a lotion to the surface which is affected, after having been mixed with from one to two pints of hot water. Afterward the parts are to be covered with a powder composed as follows:—℞.: Salicylate of bismuth, 6 drachms; powdered starch, 3 ounces. Or salicylic acid may be employed in place of the salicylate of bismuth, with twice the amount of powdered starch, namely, 6 ounces. (Ibid., March 7, 1891, p. 277.)

RINGWORM.—Disseminated Form of.

Dr. Dubreuile points out (*Annales de la Policlinique de Bordeaux*, 1891, No. 5) that ringworm of the scalp may be overlooked, owing to its occurrence in a diffuse rather than a circumscribed form—a condition which he terms "trichophytie disséminée." In such cases there is some general pityriasis, as in seborrhœa; but close scrutiny reveals isolated hairs having the characteristics of those in patches of ringworm, and the diagnosis is readily established by microscopic examination. In these cases there is but slight falling of hair, and as there are no bare patches, the condition attracts no attention. Hitherto he has only met with it in young girls with dark hair, possibly, he says, on account of the greater difficulty in its recognition among the blonde. If there be an unequivocal case of ringworm in one member of a family, he invariably searches for this disseminated form amongst other members, often with success. He has never met with it in boys, and he notes as a feature of the affection that it tends rather to occur about the age of sixteen or seventeen, the period when ordinary tinea tonsurans is comparatively rare. He refers to observations of Pellizani, who noted that there was a tendency for this disseminated form to run in families, a fact confirmed by Dr. Dubreuile. Difficult in its recognition, it is especially difficult to treat, in view of the age and sex of the subjects of it, since the most thorough measures would involve the sacrifice of all the hair. In these circumstances he is content mostly to prescribe antiseptic soaps and lotions—*e.g.*, corrosive sublimate—and to rely largely on spontaneous cure. At the same time he recommends, as securing the most certain

and rapid means of cure, the plan recommended by Alder Smith of applying croton oil to each diseased follicle, a plan which, he remarks, necessarily entails much care and patience. (The Lancet, June 27, 1891, p. 1444.)

SCABIES.—Creolin in.

Dr. De Lallis reports the use of creolin in scabies in the form of a five per cent. ointment, rubbing it once daily into the affected parts. Only four such applications are said to be necessary to produce perfect cure. Creolin, in his opinion, is preferable to any other remedy for this purpose, especially possessing the advantage over sulphur of not producing any eczema of the skin, and not staining either the skin or the linen.—*Therapeutic Gazette*, No. 1, 1891. (The American Journal of the Medical Sciences, April, 1891, p. 403.)

SEBORRHOIC ECZEMA.

The following conclusions are appended to an important paper on this subject by Dr. G. T. Elliott, of the New York Skin and Cancer Hospital. (1) Seborrhoic eczema develops primarily and with few exceptions upon the scalp, and, after remaining localized upon that surface for a longer or shorter period of time, it progresses and undergoes extension to other portions of the body. (2) It does not follow any particular regularity in its extension, but yet preserves that striking characteristic of advancing from above downward. It shows, however, a decided preference for certain regions—the face, sternal region, interscapular space, &c. (3) The primary stages of the disease are represented by the clinical manifestations to which the names pityriasis, seborrhœa sicca capitis, &c., are given, which, on the scalp, usually lead to partial or complete baldness. This latter may occur before extension of the disease has taken place, but more often after it. (4) The lesions of the seborrhoic eczema on other surfaces than the scalp may be identical with those on that region, or be represented by scaly, pale macules, or reddened papules, or nummular-like lesions, or more or less large patches. The former, undergoing peripheral growth, enlarge *in toto*, or, in the case of the discs, by involution of their central portion, become transformed into circinate lesions, with elevated red borders, enclosing a sunken-in yellow space, or, by involution of a portion of the peripheries of the latter, there results a crescentic lesion, or one representing some segment of a circle. These latter, in their advance and progress over the surface, may join together and form a gyrate or wreath-like lesion, or one constituted by a polycylic border surrounding a yellow centre. (5) The slight grades of the disease are dry and pityriasic in character, but, as the intensity

of the process increases, the amount of scaling increases greatly, or points of weeping, or a moist exudation from an eroded periphery, or a copious exudation from the entire surface of a lesion, is seen to occur. In the pityriasic lesions the presence of an abnormal amount of fat is clinically not noticeable, but this becomes more apparent in proportion to the severity of the disease, and may even constitute a marked feature, the affected portions of the skin being covered with either small, fatty, soft scales, or large crusts of the same character. (6) The slighter forms are not always sharply delimited from the healthy skin, but occur more diffusely. The other lesions—macules, papules, discs, &c.—are, however, sharply defined, and terminate quite abruptly. (7) Thickening of the skin or elevatiou of the lesions is seen only in the higher grades of the disease, but is not apparent in the primary or light stages. (8) The shape of the lesions—papules, discs, &c.—is round or oval, regular or irregular, circinate, crescentic, &c. Their colour is a pale to a bright red, a yellowish, yellow-brown, and even brown—oftener yellow-red. (9) As a rule, the subjective symptoms are limited to slight itching, especially when the patient is heated ; but in the severer grades the pruritus may become intense and excessively annoying. At times a burning and tingling sensation is complained of. (New York Medical Journal, February 14, 1891, p. 178.)

SEBORRHŒA OF THE SCALP.

Liebreich employs the following prescription in the treatment of seborrhœa of the scalp : ℞.—Spirits of ether 1½ ounces, tincture of benzoin 1 drachm, vanillin ½ grain, heliotropin 3 grains, oil of geranium 2 drops. Mark "For external use, combustible."—*Wiener medicinische Presse.* (Medical News, March 28, 1891, p. 360.)

Seborrhœa.—Ointment for.

From the St. Louis *Courier of Medicine* for December, we quote a formula of Dr. W. A. Hardaway's much used at his dermatological clinic :—Salicylic acid, 1 scruple ; precipitated sulphur, 1 drachm ; vaseline, 1 ounce ; oil of roses, q.s. Mix thoroughly. This unguent has a wide range of application, as, for example, in the diseases causing dandruff, and in tinea versicolor, keratosis senilis, and lupus erythematosus. (New York Medical Journal, March 28, 1891, p. 370.)

URTICARIA IN CHILDREN.

Comby (*Jahrb. f. Kinderheilk.*, xxxi. 1, 2) says that urticaria in children is accompanied by phenomena of a severe character, or may assume a chronic character and develop into prurigo. It is probably of toxic origin, occurs most frequently among

badly-nourished children living amid bad hygienic surroundings, and may be associated with dyspepsia and dilatation of the stomach. The hypothesis of a virus formed in the intestinal canal, taken up by the circulating blood, and distributed over the skin, would account for the gastic disturbances which so frequently accompany the disease. A predisposition to nervous diseases is also an influential factor, and all the disturbances occurring in adults in consequence of urticaria manifest themselves in the same way in children. The following is offered as a possible explanation: A badly-nourished child with dyspepsia has the well-known wheals of the disease, which at first come and go quickly. After months or years the condition changes—there is itching, but no wheals; instead of the latter there may be papules, excoriations, fissures, or eczematous eruptions. The case is now no longer one of urticaria, but of prurigo. Kaposi also has made the observation that prurigo may develop from urticaria which has lasted one or two years. Comby does not think that teething has an especially unfavourable influence upon the disease, nor even scrofula. Disorder of the stomach in the form of weakness of digestion has been regarded as an efficient cause by several writers. Prophylaxis will consist in the adoption of a suitable diet, and since breast-fed children seldom suffer with urticaria, Comby suggests for those who are deprived of this source of nutrition a carefully-regulated milk diet, suitable to the age of the patient. Meat, cereals with difficultly-digestible coverings, and alcoholic stimulants should be rigorously avoided. Overfeeding must be carefully guarded against, as this will conduce to dilatation of the stomach and dyspepsia. Sterilized milk will furnish the most appropriate nourishment. In addition the intestinal canal can be made aseptic by the suitable use of naphthol and strychnine, two centigrammes of the former being given every two hours, and two milligrammes of the latter daily. Local treatment should also be carefully provided for. Baths or local applications containing one part of vinegar and three of water have been recommended, but are not always efficient. Better treatment will consist in the daily inunction of a mixture containing one or two parts of tartaric acid and forty of vaseline. Cod-liver oil may also be used, both externally and internally. (The American Journal of the Medical Sciences, July, 1891, p. 650.)

Urticaria.—Treatment by Iodide of Potassium.

Stern (*La Semaine Médicale*, 1890) has treated five cases successfully, four of them being more or less chronic and rebellious to all previous treatment. None of the patients were either syphilitic or asthmatic. In one case, of four months'

duration, the itching disappeared on the second day of treatment, and the cure was completed after two and a half drachms of the remedy had been taken. In two cases (one acute, the other chronic) the itching was at first increased, but a successful result was obtained in each case after the administration of seventy-five grains of the drug. (Ibid., August, 1891, p. 203.)

WARTS.—Arsenic in the Treatment of.

Dr. Paul Müller, of Hamburgh, writing in the *Allgemeine Medicinische Central-Zeitung*, "cannot sufficiently recommend" the internal use of arsenic in the treatment of warts on the hands. He has employed it for more than two years and always found the warts disappear within three weeks. Another practitioner, Dr. Pullin, who seems to have used arsenic for the same purpose somewhat longer, says that he has known it cure warts in eight days. The dose ordered by Dr. Müller is only at the beginning two drops of liquor arsenicalis three times a day for adults, and a quarter of a drop for children. These quantities are gradually increased. (The Lancet, July 4, 1891, p. 33.)

AFFECTIONS OF THE EYE AND EAR.

BORIC ACID TREATMENT OF SUPPURATIVE OTITIS MEDIA.—A New Modification of.

This, according to Scheibe (*Münchener med. Wochenschrift*, 1891, No. 14), consists in the direct insufflation of boric acid powder into the drum-cavity through small perforations. It is to be accomplished by means of a powder-blower with very fine nozzle. All such manœuvres must be regarded as interfering with drainage and liable to induce damming of pus and septicæmic symptoms. [There can be no cure in such cases until perfect drainage is obtained and maintained. This can be accomplished but by excision of the membrana tympani and the two larger ossicula or their remnants.—Ed.] (The American Journal of the Medical Sciences, October, 1891, p. 420.)

CHOLESTEATOMA OF THE EAR.

At the Gesellschaft der Aerzte, Professor Politzer read a long paper on the anatomy, pathology, &c., of Cholesteatoma. He said that it was established beyond doubt that these took their origin from discharges of the middle ear, where is the loose epidermis of the external ear around the tympanum, under which a sac is formed and thrust into the tympanic cavity. He exhibited several preparations where this was the case, but in one of his specimens the sac had produced a large fistula opening

in the posterior margin of the tympanum and formed a large mass in the mastoid cells. Politzer is of opinion that these cysts can obtain their entrance more easily by the marginal Membrana Schrapnelli than a more central position. He considers that washing out where the perforation is large, with the assistance of a sharp-pointed sound, is sufficient to remove the mass. Where it entirely blocks the meatus, syringing from the middle ear by driving the water through the catheter will be necessary. (Medical Press and Circular, March 4, 1891, p. 224.)

HEMIANOPSIA.

Dr. Henry D. Noyes, of New York, publishes an article on this subject, of which the points set forth may be thus summarised: —(1) The want of uniformity in the exact location of the boundary between the blind and seeing portions of the fields in hemianopsia. (2) The continuance of a small central field in each eye two or three degrees in diameter in certain cases of double homonymous hemianopsia. (3) Sectorial defects, homonymous in character, are most likely to have origin in the cortex of the occipital lobe, usually in the neighbourhood of the cuneus. In these cases there may be absence of other significant symptoms, except, possibly, agraphia, mental blindness, alexia. (4) Sectorial defects may have origin in the subcortical substance of the occipital lobe, but the defective portion of the fields are not likely to be so well defined in boundaries as in 3, and the loss of light sense will be less complete; there may even be irregular spaces where light is recognised, mingled with blind spaces. In these cases hemiplegia, hemianæsthesia, &c., if present, signify proximity of the lesion to the anterior part of the visual radiation of Gratiolet. (5) Sectorial defects, quadrants, or other figures, can arise from lesions of the tractus (cases of Marchand and Norris), but will be accompanied by other significant symptoms pointing to the temporal lobes or to the base, such as paralyses or anæsthesiæ, &c. In these cases, as in all cases of tractus lesion, the blind region includes loss of light, colour, and form-sense. (6) Loss of either colour-sense or of form-sense, with preservation of light-sense, implies lesion of the cortex of the visual centre, either direct or indirect. (7) The hemianopic pupillary inaction signifies that the lesion is at the middle ganglia of the brain, or in front of them, viz., along the tractus, chiasm, or optic nerves. (8) It is certain that a topographical correspondence exists between the cerebral visual centre and the retina, and that it is precise and extends to details. Hun's case proved that the lower part of the cuneus corresponds to the upper part of the opposite halves of the

retinæ, and Wilbrand's cases corroborate Hun's, and carry the relationship to smaller regions in the respective localities. (The perimeter of Priestley Smith is, for convenience of manipulation and of registration, to be preferred, while the small hand perimeter of Schweigger is portable and suited to bedside examinations.) (New York Medical Record, April 4, 1891, p. 393.)

HEMORRHAGES INTO THE LABYRINTH IN PERNICIOUS ANÆMIA.

Dr. J. Habermann, of Prague, has reported a case of the above nature (*Prager med. Wochenschrift*). The patient was a young woman, twenty-one years old, who, with other symptoms of anæmia, became deaf a short time before death. The post-mortem examination revealed cicatrices in the stomach from peptic ulceration, follicular enteritis of the large intestine, intense anæmia, with hemorrhages into the meninges, the brain, the pharynx, pericardium, and small intestine, and also in the retina. Fatty degeneration of the myocardium. The right organ of hearing was examined by Habermann, and the middle ear was found entirely normal. Microscopic sections of the decalcified internal ear showed a normal internal auditory canal and auditory nerve. Numerous minute hemorrhages were seen in the cochlea; otherwise the cochlea was normal. Extensive hemorrhages were found in the vestibule and in the semi-circular canals. The symptoms, deafness and roaring in the ears, shown in this case before death, are to be explained probably by the hemorrhages in the labyrinth. The vertigo, which was also marked, may be referred, perhaps, to the hemorrhage in the semi-circular canals, or to the simultaneous lesions in the brain. (The American Journal of the Medical Sciences, October, 1891, p. 423.)

INFANTILE CATARACT.—Treatment of.

In the Ophthalmological Section of the British Medical Association, the President, Mr. N. C. Macnamara, in opening the discussion on this subject, remarked that it seemed advisable in the first place to refer to the conditions under which cataracts were most frequently met with among young children. Of these zonular or lamellar cataracts formed by far the larger number, and were not infrequently associated with defective development, not only of the eye but of the intellectual faculties. It was well known that in fœtal life branches of the hyaloid artery covered the posterior surface of the lens, and advanced forwards over its margin, helping to form the membrana capsulo-pupillaris. If, from a fault in the development of the eye, this vascular layer persisted after birth it was

apt to give rise to a film of connective tissue extending, to a greater or less extent, over the posterior surface of the lens, and so forming a zonular cataract. In some instances a small patch alone was left to mark the spot at which the hyaloid artery had passed on to the lens; in other cases a central opacity existed, with radiating bands stretching towards the periphery of the lens. Microscopical specimens had demonstrated the fact that in some of these zonular cataract consisted of a film of connective tissue, together with the remains of the hyaloid artery. In cases of this description the lens might remain transparent during a considerable number of years, but as the patient advanced in life the abnormal condition referred to tended to interfere with its nutrition, and so to produce general opacity of its substance. In some instances the lens underwent degenerative changes at an early period of childhood, and passed into the condition of a tough calcareous membrane. Anterior and posterior polar cataracts were also met with in young children, the former arising in connection with inflammation of the cornea, the latter, like zonal cataract, depending on defective development. Lastly, instances were occasionally seen of complete opacity of the whole of the lens in infants. It was not uncommon for children affected with zonular or polar cataracts in both eyes to possess sufficient sight to enable them to see large objects, and even to learn to read and write, the periphery of the lens remaining transparent; but then children had at best most imperfect vision, which doubtless tended to intensify the want of development of their mental powers. It was this consideration which it seemed to him should largely influence their practice in the treatment of these patients, for if the impediments which obstructed the passage of light to the retina could be removed, not only would the process of development of that delicate structure be greatly aided, but this most important channel, through means of which ideas and perceptions reached the brain, would be opened up. It seemed, therefore, that in cases of infantile cataract, whatever its nature might be, provided there were no special circumstances counterindicating an operation, as soon as the child had finished teething the surgeon should proceed to perform the operation of solution. A needle might be passed through the lens so as to divide the film on its posterior surface, as well as its capsule. If the lens swelled up and caused increased tension and pain it should be removed at once by linear extraction, the object being to get rid of the opaque lens, and supplying the patient with proper glasses to give him the best possible vision under the circumstances. It was true that no inconsiderable number of these patients were syphilitic, and, in addition to cataracts, had extensive choroiditis or other serious

lesions of the eye. These often improved under a specific treatment, but he had never seen an opaque lens clear in this way; on the contrary the opacity invariably increased sooner or later in life, and consequently it seemed to him advisable, for the reasons already given, to remove the cataract at as early a period of childhood as possible. He made this statement knowing full well that an iridectomy would often, in the case of persons afflicted with zonular cataract, improve the patient's vision, but this was only a temporary measure at best, and would not afford the retina the best chance of developing at that period of life when its growth was most active.

Dr. Argyll Robertson confined his remarks to cases of lamellar cataract. He thought there were a certain number of cases for which the operation for artificial pupil was well adapted. One particular advantage obtained by this procedure was that the use of spectacles might be avoided. In a large proportion of cases the clear peripheral parts of the lens might remain transparent during the whole period of natural life, and thus by an artificial pupil one might be able to pursue any ordinary occupation. He would, however, limit this operation to those cases in which the central opacity did not exceed one-third of the diameter of the lens. He had used the operation of iridodesis in some of these cases, and had always had good results from it. He thought either it or a small iridectomy best adapted for lamellar cataract. Where the opacity was more extensive he had recourse to discission, with subsequent extraction through a small corneal incision. For about a year or eighteen months he employed the suction curette for the removal of the broken-up fragments of lens, but he did not find it altogether satisfactory, and had given up its use. He thought it advisable, where the opacity was extensive, to operate at an early period of life so as to avoid the occurrence of mystagmus. Of the two methods of operating, the formation of artificial pupil was much the less serious. The disfigurement produced by the artificial pupil should be borne in mind, making that operation inadvisable in patients of the female sex, especially those of light complexion. (British Medical Journal, September 12, 1891, p. 589.)

[See also article by Mr. Macnamara, on the Treatment of Immature Cataracts, at p. 375 of this volume of the *Retrospect.*]

LATERAL SINUS.—Septic Thrombosis of.

Mr. C. F. Pickering records a case of this kind in a youth, aged nineteen, who had suffered from discharge from the ears for seven years. Four weeks previous to his coming under observation, he began to have severe pain in the right side of the back of the head and right ear, and the discharge on that

side ceased for a while. A fortnight later the right side of the neck became stiff at the upper part, and movement caused pain. When seen, he was pale and febrile. Over the right mastoid region there was tenderness and some œdema ; there was great tenderness over the upper part of the right sterno-mastoid ; beneath its anterior border a tender cord could be made out ; the neck here was fuller and more prominent than on the other side, and there was slight right facial paralysis. There was a yellowish offensive discharge from the right meatus ; and on this side the patient could not hear a watch either in contact or on the mastoid. Commencing optic neuritis was found in both eyes ; less marked in the left. On the following day under chloroform the mastoid was gouged, the antrum opened, and about half a drachm of pus allowed to escape. Two days later the patient had a rigour and a red swelling appeared on his arm ; but this was opened a fortnight later, and after that his recovery was unimpeded. The clinical picture of septic phlebitis was almost perfect.—*Bristol Med.-Chir. Journal*, September, 1891. (The Practitioner, November, 1891, p. 369.)

MEMBRANA TYMPANI. — Use of Collodion in Relaxation of.

Dr. Lannois, of Lyons, France, calls attention (*Annales des Maladies de l'Oreille*, etc., vol. xvii., No. 1) to the above-named treatment, first suggested, he says, by McKeown, of Belfast, in 1879. Employment of collodion has no inconveniences nor dangers, and the author thinks that it not only holds the relaxed membrana in proper position, by its contractive and extracting power, but also that it possesses a truly curative effect, as the patients continue to hear better after the collodion film is removed from the ear. Two cases are then told in detail illustrative of the good results of this treatment in relaxed conditions of the membrana tympani. McKeown recommended to paint the collodion on the membrana, but Lannois prefers to drop into the ear a few drops of the collodion after the membrana tympani has been pushed into the normal position by inflation of the tympanic cavity. (The American Journal of the Medical Sciences, October, 1891, p. 422.)

MÉNIÈRE'S VERTIGO AND THE SEMI-CIRCULAR CANAL.

The experiments of Flourens, which seemed to attribute to the semi-circular canals the *rôle* of maintaining the equilibrium of the body, have been controverted by others to such an extent as to make it appear doubtful whether that part of the labyrinth is the seat of the lesion which determines the so-called vertigo

of Ménière. The peculiar character of the vomiting, the fact that the latter symptom may occur suddenly without nausea, after irritation of the membrana tympani, the intimate connections between the pneumogastric and the auditory nerve at their origin, renders it more probable that the vertigo and cardiac symptoms are due to a reflex action in the pneumogastric dependent upon a lesion in some portion of the auditory nerve. The term Ménière's disease serves more frequently to mark ignorance of the lesion which occasions a series of symptoms often analogous but which are under the influence of very different causes.—Sir Wm. B. Dalby, *Brit. Med. Journal*, and *Annales des Maladies de l' Oreille*, &c., vol. xvii. (Ibid., October, 1891, p. 422.)

MINER'S NYSTAGMUS.—Its Cause.

I have no doubt the prime cause of nystagmus must be traced to the peculiar circumstances under which a collier's work is accomplished. As long ago as 1875 I drew attention to this, and stated that "it seems to me this disease occurs chiefly, if not entirely, in those colliers who are obliged to do their work in the pit whilst lying on one of their sides." In a paper before the Ophthalmological Society in 1884, I further elaborated this contention of the relation of position at work in causing the disease. All tended to show that nystagmus was associated with a particular class of colliers performing a particular kind of work. The kind of work alluded to is called "holing." Among other evidence advanced in the paper mentioned was an account of a visit to a coal-pit made by me to verify, by actual observation of the men at work, the impressions gleaned from clinical experience. To put it briefly, the men whom one expected to find suffering from nystagmus were so afflicted, whilst others pursuing different kinds of work were unaffected. My further observations will be found to support the views I have previously set forth. Further experience and a better acquaintance with the working of coal-mines have shown me that in others besides those "working on their sides" (holing) an attitude is assumed necessitating a somewhat similar position of head and eyes. It is work common not only in this country but on the Continent. The French name—*travail à col tordu*—expresses its cramped nature. A man lying on his side engaged in "holing" either whilst making the hole or whilst continuing his work under the coal, will of course fix his gaze at different parts according to where it is necessary to strike, for his eyes will follow his pick point, but the tendency will be for the gaze to be directed more or less obliquely. I have satisfied myself on this point times without number. The miner will lie on his side, sometimes the left, sometimes the right, as is most convenient; his legs will be crooked up, his head thrown back and flexed

more or less on the shoulder beneath, and the eyes will have the direction as just mentioned. The physiology of the ocular movements supports my contention, because when we incline the head to one side or the other by turning it on its antero-posterior axis, rotation of the two eyes upon their antero-posterior axes takes place probably by the instrumentality of the oblique muscles. A miner working on his left side will be using in the left eye the superior rectus, inferior oblique, and internal rectus; and in the right the same two first-named muscles, but substituting the external for the internal rectus. If he be on the opposite side the arrangement will be reversed. The to-and-fro movements met with in nystagmus are thus accounted for by the weariness of the outer and inner recti, the rotatory by the inferior oblique, and the superior rectus aids here or in occasioning the vertical movements. I may mention as worthy of note the ready manner in which discomfort is occasioned and nystagmus rendered evident, even in cases that have improved by rest or change of work, by assuming before one the position required in holing. Also the oscillations become perceptible on directing the eyes upwards and particularly obliquely upwards, when otherwise they would be less evident or pass unnoticed. Some men are accustomed to do their work with one side down more than the other, and not infrequently the oscillations are more marked on looking to one side, and it is often possible thus to tell the patient on which side he is most accustomed to work. (Mr. Simeon Snell, The British Medical Journal, July 11, 1891, p. 63.)

RHINITIS, CHRONIC ATROPHIC.

At the Medical Society, on April 6, 1891, Dr. F. de Havilland Hall read a paper on chronic atrophic rhinitis. He suggested that the term ozæna commonly used as a synonym for this disease should be discarded. Age and sex were important etiological factors, the majority of cases commonly commencing before the 16th year, and females being more frequently attacked than males in the proportion of seven to two. He was of opinion that the disease was met with more especially in phthisical and anæmic patients. Though there was no distinct anatomical evidence, the majority of observers considered that the disease was preceded by a hypertrophic stage. By some authorities a congenital deficiency or an arrest in the development of the turbinated bones had been regarded as the cause of the disease, the enlarged nasal passages allowing mucus to be retained and undergo decomposition. As regarded the action of micro-organisms there was a great difference of opinion. Loewenberg had discovered a micrococcus in the mucous membrane which he considered to be the cause of

the disease. Whether this was the case or not, there was no doubt that bacteria played an important part in the production of the fetid odour. He described the symptoms and diagnosis; he said that, though not curable in the usual sense of the term, yet assiduous attention to treatment usually overcame the most disagreeable symptoms. He gave the details of the treatment he employed, insisting upon the fact that, if the medical man took care to remove the crusts in the first instance, then it would be sufficient to direct the patient to use one or other of the sprays the formulæ of which he gave. He showed how the dryness, which was the cause of the patient's greatest discomfort, could be mitigated, and said he had obtained good results from anointing the interior of the nose with vaseline containing oil of eucalyptus in the proportion of a drachm to the ounce. He spoke highly of an American antiseptic known as Listerine, which, mixed with water in the proportion of 1 in 10 was very useful as a deodoriser and disinfectant. (The British Medical Journal, April 11, 1891, p. 805.)

SQUINT.—Operative Treatment of.

In the Ophthalmological Section of the British Medical Association, Mr Henry Juler read a paper in which attention was called to an analysis of 174 cases upon which he had operated. Of these 151 were convergent and 23 divergent squint. Of the 23 cases of divergence, at least 7 cases had at some previous period been operated on for convergence. The refractive condition of the two classes of cases was approximately given. The acuteness of vision was reduced to $\frac{6}{18}$ Snellen or less in one eye in 84 cases; it was greater than $\frac{6}{18}$ in both eyes in 34 cases, but was not recorded in 56 cases, the patients being too young. The kinds of operations performed were classified, and showed that tenotomy of the muscle was supplemented by the advancement of its antagonist in at least 48 out of 151 operations for convergence, and in at least 10 out of 23 for divergence. The author thought that discussion and expression of opinion were desirable in order to determine the best operation to select acccording to the nature of the case presenting itself. They required more definite knowledge (1) as to the earliest age at which a child under 5 years of age should be operated on; (2) whether an adult person should be operated on at all; (3) in what peculiar cases advancement of the antagonist should be combined with tenotomy of the rectus internus or externus muscle. He desired to exclude all cases of mere occasional or periodic squint, as well as all cases of mere insufficiency of the interni from the discussion. No child with permanent squint was too young for operation. Its visual axis ought to be put straight by carefully and tentatively performed tenotomy, in

order to give it the chance of educating the squinting eye. No adult was too old for operation. The fear of diplopia, which some surgeons entertained, had not been realised in these cases. It was to be regretted that people should be allowed to suffer the great disfigurement of squint, when it could be removed by a painless and simple operation without the least detriment to the patient. He was in the habit of combining advancement of the antagonist of a muscle in all cases where there was amblyopia in one eye. Details were given as to the method of operation, the amount of advancement, ligatures, &c. (Ibid., September 12, 1891, p. 590.)

Squint. — Treatment by Advancement of the Recti Muscles.

At the Ophthalmological Society, on June 11, 1891, Dr. Adolph Bronner (Bradford) read notes of fifty cases of strabismus treated by advancement of a rectus muscle according to the method advocated by Schweigger. In this operation the muscle is thoroughly freed from its connection with the sclerotic and with Tenon's capsule, and then attached, in a new position, to the superficial layers of the sclera and the conjunctiva. Most of the cases were operated upon without general anæsthesia, cocaine only being used. Dr. Bronner drew attention to the large number of cases of convergent strabismus, in which the external rectus was thin and atrophic. He thought it was of the greatest importance that the size and condition of the muscle should be ascertained before the advancement was performed. In many cases tenotomy of the antagonistic muscle was necessary, and in some tenotomy or advancement of the muscles of the fellow eye had to be done. In all cases of divergent strabismus tenotomy of the external and advancement of the internal rectus were necessary, and the immediate effect of the operation should be slight convergence. In no case should the same muscle be tenotomised more than once. The author thought that advancement of the muscle should be performed in all cases in which the squinting eye was amblyopic, and in which the angle of the deviation measured more than 30°. The advantages of advancement of a muscle over an ordinary tenotomy were that the danger of a subsequent strabismus in the opposite direction was much less, and that the operation aimed at strengthening a weak muscle instead of weakening a muscle previously strong. The President said that his experience of tenotomy had been favourable, and that he rather preferred the simpler operation, in most cases. He had met with but few undesirable results. The cases he found most difficult to deal with were those of very slight squint with extremely troublesome diplopia. (Lancet, June 27, 1891 p. 1432.)

TINNITUS.—Freezing the Mastoid for.

The technique upon which I have most relied during the last three years for the control of distressing tinnitus after routine measures have failed, consists in *freezing the mastoid region* over the branches of the posterior auricular and stylo-mastoid arteries by means of a rhigolene or ether spray. The skin is frozen white over the entire mastoid area—of course with proper caution—at intervals of from one to six weeks, for an indefinite period ; the results being almost invariably good, and "cure" of the tinnitus in a certain proportion of cases. The method was publicly used and lectured upon by me to the Polyclinic class in the fall of 1887, and has since been used continuously with increasing confidence. The exact explanation of the result is somewhat doubtful ; the well-known vasomotor effect of freezing methods are, however, well known, and it is doubtless by means of the nerve influence, acting through the stylo-mastoid artery—which supplies the tympanum, mastoid cells, and semi-circular canals—that the method acts favourably. It is also well-known that surface freezing lessens the conductibility of nerves, and profoundly affects nerve centres. (Dr. R. W. Seiss, Philadelphia Polyclinic, The American Journal of the Medical Sciences, April, 1891, p. 351.)

TRACHOMA.—Perchloride of Mercury in.

At the Ophthalmological Society, on July 3rd, 1891, Mr. Kenneth Scott (Cairo) communicated a paper on perchloride of mercury in the curative treatment of trachoma and other conjunctival diseases (read by the Medical Secretary). Mr. Scott had met with a large number of cases of trachoma in Egypt, and after a trial of the ordinary methods of treatment had had recourse to perchloride of mercury. He used a 4 per cent. solution, made by dissolving the salt in glycerine, and then diluting with water. This was applied to the everted lids once a day, and in addition a $\frac{1}{4}$ per cent. solution given to the patient to be used thrice daily. Iron tonics were usually prescribed during the treatment. Most of the cases were treated as hospital out-patients ; a few were admitted to the wards. Mr. Scott had had very satisfactory results with this treatment, curing nearly all cases in about eight weeks. A similar treatment had proved very efficacious in ophthalmia neonatorum, in which the internal administration of iron was omitted.

Mr. Mackinlay called attention to the fact that the use of perchloride of mercury was by no means new. It had been recommended by many of the older writers, but the strength of the solution employed varied widely. (The Lancet, July 11, 1891, p. 73.)

SYPHILITIC AFFECTIONS.

CHANCRE, SIMPLE.—Treatment of.

Du Castel writes that the danger of simple chancre lies, for the most part, in its virulence and in the ease with which it re-inoculates the tissues. The object of treatment, must be to destroy its virulence and to convert the ulcer into a simple wound. The best mode of treatment is the use of either the actual cautery or powerful chemical caustics. In applying these, care must be taken to reach all parts of the sore, for if any part escapes destruction it will furnish a virus capable of infecting the wound made by the caustic. The use of the thermo- and galvano-cautery, and of electrolysis, as recommended by Apostoli, is attended with intense suffering, and Du Castel prefers chemical caustics. Ricord employed the carbo-sulphuric caustic, which is composed of sulphuric acid and powdered vegetable charcoal combined in the proportions necessary to make a paste, which is applied to the chancres. This paste quickly dries and forms a sort of scab, which remains adherent to the sore for several days. When it falls off there remains a simple wound, free from virulence, which soon heals. This application, however, is attended with very severe pain. M. Diday prefers Canquoin's paste—chloride of zinc. This is applied to the chancre, which should be well cleansed, but should not be bleeding, care being taken to cover the whole surface. Around the edge of the paste is applied a small circle of diachylon ointment, while a few drops of collodion are allowed to fall upon the surface of the paste. At the end of from one to three hours the diachylon ointment is removed and the collodion dissolved with ether. The paste is then readily detached, when the face of the eschar is found perfectly dry. If a suppurating spot remains, the cauterization has been incomplete, and the paste must be at once re-applied. The eschar formed by this method falls off on the sixth day, leaving a healthy wound which soon heals. This method is comparatively painless. The destruction of a chancre by caustics is always a serious operation, and has a number of contra-indications. The loss of substance which it entails and the cicatrix which results render it absolutely impracticable in the treatment of a certain number of simple chancres, such as those of the meatus or of the urethra. In cases of multiple chancres, if all cannot be treated at the same time, it is better not to cauterize any of them, because of the danger of re-infection. When the chancre shows a tendency to cicatrize, caustics should not be used. Wherever from the form or seat of the chancre, such as subpreputial chancres with phimosis, the application will be imperfect, it should not be

made. When the patient is unable to bear such active treatment, it is necessary to employ some milder method. The ferro-potassic tartrate, according to Ricord, has a specific action upon phagedænic chancres. Such ulcers should be dressed with pieces of charpie soaked in the following solution : ℞.—Ferro-potassic tartrate 7½ drachms, distilled water 6½ ounces.

M. Diday recommends the employment of a solution of silver nitrate, 12½ grains to 5 drachms of distilled water. Pledgets of cotton soaked in this solution are applied to the sore three times daily.—*La Tribune Médicale*, December 25, 1890. (Medical News, February 28, 1891, p. 249.)

GONORRHŒA.—Treatment of.

Dr. Hanika, of Munich, recommends (*Der aerztliche Praktiker*, No. 11, 1891) that gonorrhœa be treated by filling the urethra with a powder composed of equal parts of tannin, iodoform, and thallin sulphate, and states that in twenty-six cases in which he has used this method of treatment it never failed to cure the disease in a very short time. The powder is introduced through a metal tube fitted with an obturator, a straight instrument being used when the anterior portion of the urethra only is affected, and a curved one when the posterior portion has to be reached. The application is always to be made immediately after the patient has emptied his bladder. In most of Dr. Hanika's cases the process was repeated only once a day, but the result was more favourable when the applications were made night and morning. Dr. Hanika states that he has, by this means, often cured the most violent gonorrhœa in a few days. (Supplement to the British Medical Journal, July 18, 1891, p. 21.)

ORCHITIS.—Treatment by Refrigeration.

In his inaugural thesis, Dr. De la Valle reports the results of the treatment of orchitis employed in the service of Dr. Du Castel (*Journal de Médicine*, April 10th, 1891). This process consists in painting the scrotum with a camel's-hair pencil dipped in the chloride of methyl, the operation to be repeated twice daily. It is stated that immediate and considerable relief ordinarily follows the very first application, even in cases where the patients hitherto have been confined to the bed. The average duration of the treatment is 7½ days ; the average time the patients remained in the hospital 11½ days. This treatment is extremely simple, and does not necessitate the employment of any other medicinal treatment, whether internally or by external application.—*Therapeutic Gazette*, June 15, 1891. (Edinburgh Medical Journal, September, 1891, p. 269.)

SYPHILIS, Congenital.—Treatment of.

In infants inunction is easily practised in a variety of ways, and is usually very effectual. I have also found a solution of the bichloride, in small doses, a very efficient remedy, and not so liable to purge as the grey powder. If there is any evidence of bone disease, the iodide of potassium should be combined with it. If the symptoms are severe, and especially if the viscera are involved, infantile syphilis is undoubtedly a dangerous disease, and apt to terminate fatally by marasmus or convulsions. If, however, the specific is well borne, and the child passes favourably through the secondary stage, then I think there is, as a rule, very little danger of relapse; and a condition of good health may be expected, until, at a later period, say eight to fifteen years of age, the liability to keratitis, deafness, phagedænic affections of the throat, &c., may come on. These late manifestations of inherited taint occupy in reference to treatment a most exceptional position. Although we always prescribe specifics, they seldom or never appear to exercise any definite power. Keratitis will often run its course apparently almost uninfluenced, or the second eye may be attacked while the patient is under the remedies employed for the cure of the first. As regards the deafness, unless the remedies are used in its very earliest stage, I fear they very seldom prove of any value. It is certainly to be strongly urged in reference to both the deafness and the keratitis that mercury and iodides should be prescribed promptly and liberally, but we must be prepared to encounter much disappointment, and to forego all hope of the rapid cures which the same remedies often effect in other conditions. It may be well that we should remember, in reference to this class of maladies, that they occur in those in whom probably the syphilitic virus has long ceased to be active, and who would be quite incapable of conveying the disease by contagion. They are tissue maladies, not the result of existing blood-poisoning. Hence probably, in part, the impotence of mercury, to manifest its specific power. There is no microbe left for it to kill. (Mr. Hutchinson, The Practitioner, June, 1891, p. 415.)

Syphilis.—Intra-muscular Injections of Mercury in.

I have employed intra-muscular injections of salicylate of mercury in a long series of cases of secondary and tertiary syphilis, and always with most satisfactory results. The solution used was as follows:—℞.—Hydrarg. salicylatis gr. xvj.–xxiv., mucilag. gummi arabici gr. viij., aquæ destillatæ f℥vss.; m. ft. suspension. Of this, one Pravaz syringeful (℥xv) was injected at a time; this was repeated at intervals of three days. I selected the gluteal region as the site for injections.

The time during which the cases were treated varied from three weeks to two months. The therapeutic value of the salicylate of mercury was especially remarkable in syphilitic affections of the skin and of the mucous membranes; syphilitic eruptions and slight relapsing forms yielded to the treatment in from two to four weeks. The local reaction was slight—even less than after the use of calomel and of the yellow oxide of mercury. In no case did an abscess form, either at the point of injection or in its vicinity. Infiltrations were rare, and the more pronounced symptoms of mercurialism did not develop. (The Medical News, August 15, 1891, p. 181.)

Syphilitic Sore Throat.

Lately I have used, with a most pleasing and beneficial result both to myself and to my patient, the ordinary lotio nigra. Mucous patches that defied extirpation with other medication, have disappeared rapidly and permanently when this solution has been used according to my directions. I employ this wash for the mucous patch, the superficial ulcer, and the deep and dreaded tertiary lesion. It acts marvellously well in all three, much better than the carbolic acid, cautery, the iodoform, and any I have ever tried. The most afflicted throat will feel its good effect after one or two applications. We have in this simple wash a specific for this class of throat affections. I also use it through a spray in treating ulcerations of the mucous patches of the larynx. (Dr. Harrison Griffin, of the Belle Vue Hospital, New York, in the Medical Record, August 22, 1891, p. 206.)

OBSTETRICS AND GYNÆCOLOGY.

ADENOMA UTERI.

Neither glandular hypertrophy of the endometrium nor so-called adenoid polypus is a genuine adenoma. The only true adenoma of the corpus uteri is essentially malignant both anatomically and clinically—anatomically because it infiltrates the deeper tissues, and clinically because it recurs after removal and eventually assumes a more malignant character. Malignant adenoma is not at the outset identical with adeno-carcinoma, but may be regarded as the initial stage of the latter, having many of the same symptoms. Rapid recurrence after removal by the curette of an intra-uterine growth which does not appear to be distinctly malignant histologically, and has existed for a considerable length of time, should suggest the probability that it is adenoma, provided that the patient, although at the age

when cancer of the corpus uteri is most common, does not have the foul discharge and cachexia attending advanced malignant disease. A positive diagnosis is possible only after digital explorations of the uterine cavity and the removal with the sharp curette for microscopical examination of a bit of the suspected growth, with the subjacent muscular tissue. As soon as the diagnosis of a malignant growth is reasonably certain total extirpation of the uterus should be performed without delay. Palliative measures simply favour the more rapid transition to carcinoma, when the prognosis as regards a permanent cure becomes much more doubtful. (Dr. H. C. Coe, Gynæcologist to the New York Cancer Hospital, The American Journal of the Medical Sciences, August, 1891, p. 116.)

CARCINOMA OF THE UTERUS.—Hysterectomy for. [*Leisse: Archiv. für Gynäkologie*, No. 40, 1891, Heft 2.] So much has this operation been decried on the ground of failure to radically cure, that the latest batch of statistics from Leopold's Klinik, in Dresden, will be received with peculiar interest. A carefully conducted inquiry into the present condition of all the patients thus operated upon in that institution from 1883 up to May, 1889, has been made in the present year. The majority of these patients surviving, were examined with a view to determine local conditions; a few only were unavailable, and replied by letter. From 1883 to May, 1889, in all, eighty total extirpations per vaginam were conducted. In all these cases, at least two years have elapsed since operation; and out of the eighty, forty-five are still living, and in good health. The majority of the deaths have occurred during the later part of the time embraced; this being accounted for by the statement that a greater skill in operating has allowed the inclusion of cases previously outside the pale of probable successful operation. Of the thirty-five deaths, eight were due to other diseases, *e.g.*, phthisis, &c.; so that the mortality, after a probation of two years, is lowered to 37·5 per cent., due to recurrence. Sixty-two and a-half per cent., therefore, of the cases were successfully operated upon; and this after a two years' test. (Dr. Barford's abstract in The Medical Chronicle, October, 1891, p. 52.)

FIBROID TUMOURS OF THE UTERUS.—Effects of Removal of Uterine Appendages on. Concerning the disappearance of tumours after the removal of the appendages and the arrest of menstruation, there can be no doubt whatever that the youth of the patient has a great deal

to do with the activity of the process and the extent to which it is carried out. I cannot give the figures which will yield an exact indication of this result, but I think it may be fairly expressed as follows: That under forty years of age about seventy per cent. of the tumours entirely disappear. Between forty and fifty, as a rule, they do not disappear entirely, but become markedly diminished, and after forty-five the diminution is only a shrinking, running between one-third and one-sixth of the bulk of the mass. There have been in my experience, however, remarkable exceptions to this latter conclusion, as I have seen a tumour much larger than an adult head disappear in a woman between forty-nine and fifty after the operation. The ages of many of the patients indicates very clearly the erroneous belief which exists in the professional mind that the approach of the age at which the menopause usually takes place gives anything like certain relief in cases of myoma, for no fewer than nine of my cases were upward of fifty years at the time of the operation. (Professor Lawson Tait, in an address to the French Surgical Congress at Paris, New York Medical Record, May 2, 1891, p. 502.)

Fibroid Uterus.—Abdominal Extirpation of.

Lihotzsky (*Wiener klin. Wochenschrift*, No. 27, 1891) reports ten cases of abdominal hysterectomy in Chrobak's clinic with only one death, from causes independent of the operation. Chrobak's technique is briefly as follows: After ligating the broad ligaments, the operator dissects off the peritoneum anteriorly and posteriorly, and separates the bladder as low as the vaginal fornix. The cervix is then constricted with a rubber cord, the tumour is removed, and the cavity of the stump is packed with iodoform gauze (after being thoroughly cauterized), which is closed in with temporary sutures. The vaginal fornix is then opened, a sound being introduced from below as a guide; the uterine arteries are tied, and the stump is removed. After tamponing the wound from above, the edges of the peritoneum are united in such a way as to cover in the stumps of the broad ligaments, and the abdominal wound is closed, drainage being maintained *per vaginam*. The advantages of this method over supra-vaginal amputation are not only the avoidance of the danger of sloughing of the stump, but the shortening of the period of convalescence, and the doing away with repeated dressing of the wound. The operation is practically reduced to the level of a simple ovariotomy, and there is no unsightly and painful cicatrix, or risk of hernia. The patients are free from the discomfort incident to traction of the stump. (The American Journal of the Medical Sciences, October, 1891, p. 435.)

LOCHIA, FŒTOR OF.—Treatment of.

I may point out that when the lochia are offensive, no advantage is gained by suppressing the fœtor by the use of mere deodorants, which fail to get at the root of the mischief, or to attack the germs themselves. To employ lotions which deodorise without disinfecting is like cutting the rattle off the snake without extracting his fangs. I would urge that such local antiseptic measures should be taken as are capable of removing the toxic principles already produced, and, as far as possible the devitalised products out of which they are formed ; they must be competent also to destroy the germs upon which decomposition depends. And, further than this, other germs of a pathogenic nature, if present, as they may well be in such cases, will be destroyed at the same time, except such as have already passed into the system beyond the reach of the local antiseptic. One word in conclusion with regard to the method of procedure. As decomposition most frequently takes place about the vulva and lower part of the vagina than higher up in the canal, attention should first be directed to this situation. All lacerated surfaces should be cleansed and washed thoroughly with strong antiseptic lotion, such as perchloride of mercury (1 in 1,000). If this fails to reach the seat of the mischief, the vagina should be douched, and only after this has been done should the uterine tube be used. In this manner the risk of carrying septic matter from the vulva or vagina into the uterine cavity, and thereby increasing the mischief, is reduced to a minimum. It seems to me advisable to do this thoroughly once at the outset rather than to run the risk of being called upon to repeat the process. (Dr. Boxall, Middlesex Hospital, The Practitioner, May, 1891, p. 342.)

NIPPLE.—Treatment of Fissures of the.

Dr. Barton Hirst, of Philadelphia, in the *University Medical Magazine* for March, advises the use of an application of equal weights of castor oil and subnitrate of bismuth in the treatment of fissure of the nipple. The nipple and adjacent parts should be thoroughly washed and disinfected before applying the ointment. One of the advantages of this application is that it need not be removed if it becomes expedient for the child to nurse at that breast. The ointment makes a smooth and flexible coating, which not only serves as an efficient protective, but tends to reduce the pain and reflex irritation. For the mammary engorgement and pain that so frequently occur when the nipple becomes fissured, he advises the employment of lead water with laudanum, in addition to the ordinary sling-compress. The entire breast should be covered with a cloth wet with the lotion, and the applications should be repeated at short intervals.

This line of treatment ordinarily prevents the formation of abscess. It is best to allow the unaffected breast alone to be nursed, and the milk from the affected side can be drawn off with the breast-pump. If it is imperative that the infant shall nurse at the fissured nipple, a glass shield with a rubber tip may be used. (New York Medical Journal, August 1, 1891, p. 131.)

PREGNANCY, VOMITING OF.—Elevation of the Pelvis as a means of relieving.

In 1877 I was called to attend a lady in her first pregnancy, about the third month of utero-gestation. I learned that for fully ten days she had been unable to take food, and with great difficulty retained even the smallest quantity of liquid nourishment. Almost every form of treatment had been tried without any apparent good result. As a last expedient, I decided to test the effect of elevation of the pelvis, which was accomplished by lowering the head and thorax, and placing several pillows under the sacrum. In a short time the change for the better was encouraging, and continuing the position at intervals for a few hours, in two days the marked improvement in the system was quite evident, and utero-gestation proceeded to the full term without any return of this abnormal condition. Within the past month, two cases of severe vomiting in early pregnancy came under observation, in both of which I adopted the same treatment, with equally satisfactory results. Guémot, referring to the rational treatment of vomiting during pregnancy, says that a morbid or abnormal state of the uterus, the nervous system, as the carrier of reflex action, and the stomach, are the prime factors in the malady. The idea of Smellie's, that the complaint is "chiefly occasioned by fulness of the vessels of the uterus," certainly is most rational. The elevation of the pelvis gradually lessens the quantity and force of the blood in the uterine vessels, and thus reduces the quasi-irritability, or, as Dr. James Stewart of McGill terms it, "the instability of the nerve elements" in the uterine nervous system, the abnormal influence of which, prior to the change of the pelvic position, had been rapidly telegraphed to the spinal and gastric nervous centres. (Sir James Grant, M.D., Montreal Medical Journal, June, 1891, p. 894.)

PREMATURE LABOUR.—New Method of Inducing.

Dr. Schrader, of Hamburg, publishes in the *Centralblatt für Gynäcologie* a method of inducing premature labour, based on his observation that cold is a greater excitant of the nervous, and consequently also of the muscular, system than warmth. Continuous irrigation at the temperature of 45° F. is impracticable

on account of the pain it causes, but a cold douche alternating with a warm one can be borne. Dr. Schrader connects a vaginal glass tube by means of a T-shaped piece and the necessary india-rubber tubes to two irrigators, one of which contains the cold and the other the warm water. By allowing now one instrument and now the other to work, cold or warm water may be sent through the vaginal tube into the vagina. Two people are required—the one to fill the irrigators, the other to work the douche. For each sitting about twenty-four litres of cold and half the quantity of warm water at 112° are required, and the douche has a fall of about one metre and a half. The irrigation begins with the warm current, and before the cold water is turned on pressure is made on the perineum with the vaginal tube, so as to allow all the warm water to run away from the vagina. The same plan is observed before the change from cold to warm, by which means the alteration in the temperature, as felt by the patient, is always sudden. Each time about two litres of cold and half the quantity of warm water are used. The douche is generally repeated about every hour and a half until labour is active enough to make its continuance probable. Of eighteen women treated by this method exclusively, and four others who were partly so treated, one died of eclampsia twelve hours after delivery, but all the others made a good recovery. The eighteen women who were treated by the douche exclusively had twenty children, of whom fifteen, that is 75 per cent., were alive. These cases required on the average ten douches and a half; in half the number three douches and a half were sufficient. (The Lancet, March 21, 1891, p. 676.)

PUERPERAL UTERUS.—Curetting of the.

The subject of the advisability of the use of the curette after labour at term was discussed in a recent meeting of the Obstetrical Society of Berlin (*Centralblatt für Gynäkologie* No. 18, 1891). Fritsch had given the method of treatment by curetting a fair trial, but was convinced of the danger and injury accompanying the practice. He believed that recovery in cases of puerperal sepsis depended largely upon the encapsulation of the focus of infection, and this was prevented by the interference of the curette. The advocates of curetting consider it indicated in sapræmic cases, but the diagnosis of sapræmia is often impossible during the life of the patient. Olshausen did not favour curetting the puerperal uterus on account of the danger of rupturing the uterus, which is greatly thinned after labour. He considered the danger of accidents when the puerperal uterus is curetted with a sharp curette to be very great. He also believed that in most cases septic infection gains entrance

to the uterus through lesions in the cervix. Portions of the endometrium become involved at a time, rarely the whole. It is impossible with the curette to select the affected portion and hence more harm than benefit may result from curetting. Veit narrated his observations with four cases where he had seen injury and a bad result follow curetting. He considered the proposition to treat the uterus in puerperal sepsis like an abscess cavity a distinct step backward, not an advance. After the period of incubation there is in puerperal sepsis an indifferent stage in which exact diagnosis as to the degree and probable severity of the infection is difficult; during this stage the sharp curette is the most inappropriate of instruments, antiseptic injections being much more suitable and efficient. Gottschalk discussed the question from the standpoint of bacteriology, remarking that Braun, who introduced the curette in obstetric practice, advised its use in sapræmia and not in septicæmia and pyæmia. He recognised the difficulty of making a differential diagnosis in a given case between these conditions, and, furthermore, when such a diagnosis is made, the abrasion of tissue produced by the curette was extremely injurious. In the unmolested uterus the conditions are not favourable for septic absorption; saprophytic products are not injurious to living cells, and are safely removed by the lochia. At the placental site but little mucous membrane is left to harbour bacteria. Curetting removes thrombi from sinuses and favours the absorption of concentrated solutions of ptomaines, which are highly poisonous. Most rational and safe is the treatment of this condition by irrigating the uterus with sterilized water at 104° F. The heat stimulates the uterus to contract and expel poisonous materials, while the water dilutes the ptomaine solutions until they are innocuous. (The American Journal of the Medical Sciences, July, 1891, p. 99.)

UTERINE HEMORRHAGE.—Ergot in.

Professor Heinrich Fritsch, of Breslau, calls attention to a form in which he has used ergot and to which he has given the name tinctura hæmostyptica. He found in cases where prompt effect was wanted and local treatment could not be carried out, that a mixture containing powdered Secale cornutum, alcohol, and sulphuric acid acted well, but had the disadvantage of disturbing the digestion. He then learnt that Denzel's extract or ergotin acted best of those given by the stomach, and he has used it frequently in form of pill, thus:—℞. Ergotini denzel et secalis cornuti pulverati, āā gr. 75; divide in pil. 100. Six pills to be taken daily. These may be taken for months. In profuse menstruation or "congestive dysmenorrhœa" the following formula is valuable:—℞. Ext.

hydrastis canad., ext. gossyp., ergotini denzel, āā gr. 45. Divide in pil. 100. Three pills to be taken thrice daily. In order to have a liquid preparation, he embodied the principle of the mixture given above, which could not be borne on account of the gastric disturbance it produced, and formed a tincture—the tinctura hæmostyptica. The cases in which the best results are obtained are menstrual and other uterine hemorrhages, where operative measures are at first contra-indicated or unnecessary. Thus in hemorrhage after a confinement or at the climacteric, or in chlorosis of early puberty, it is very useful. A tablespoonful of the tincture contains a little over twenty grains of the secale cornutum, and that amount twice a day is a full dose.—*Therapeut. Monatshefte*, No. 1, 1891. (The Practitioner, April, 1891, p. 294.)

UTERUS, CANCER OF.—Treatment and Curability. In a paper with this title (*Münchener med. Wochenschrift*, 1890, Nos. 42 and 43) Hofmeier questions if the introduction of total extirpation of the uterus for cancer of the cervix has proved to be a decided advance in the treatment of the disease. In support of his position he cites the statistics of different German operators, showing that Kaltenbach reports 30 per cent. of his patients free from recurrence one year after operation, Martin 41 per cent., Olshausen 47·5 per cent. at the end of two years, and Schauta 47·3 per cent. He criticises the statistics of the Munich clinic—64·4 per cent. without recurrence two years after operation—since they are the same as those claimed by Leopold in 1887. Attention is called to the slight favour with which total extirpation is regarded in England and America, as compared with its popularity in France and Russia. The results obtained by Byrne by the use of the galvano-cautery (77 per cent. cured at the end of two years), and the combined results of Schröder's operations at the hands of Pawlik and the writer, are also alluded to. The statistics of high amputation by Schröder and Hofmeier (45·2 per cent. free from recurrences after two years) corresponds closely with those of total extirpation, and therefore show that the radical offers no decided advantage over the partial operation. In both classes of cases it appears that nearly 50 per cent. of the patients in whom the diagnosis was made in the incipient stage of the disease were well two years after operation. The writer next discusses the question whether it is a fact that the upper segment of the cervix is affected in cases of commencing epithelioma of the portio vaginalis. If this were true, total extirpation would invariably be indicated, but, in his opinion, this has not been satisfactorily proved anatomically. (The American Journal of the Medical Sciences, April, 1891, p. 435.)

Medicine.

GENERAL MEDICINE AND THERAPEUTICS.

Art. 1.—ON BLOODLETTING.

By Samuel Wilks, M.D., F.R.S.

[Referring to Dr. Ogle's paper in *The Lancet* of May 9th, 1891, Dr. Wilks says :]

Dr. Ogle having given you in an interesting communication his opinion on the value of bloodletting, I should in like manner be pleased to offer you my own experience, which is highly confirmatory both of his and that of Dr. Pye-Smith, Dr. Broadbent, and other eminent medical men. During the whole of my professional life I have occasionally used bloodletting as a remedial measure, and have probably adopted venesection in about thirty cases. In some lectures on chest diseases, published many years ago, for the use of students, I said, "As regards bleeding, there cannot be a doubt that in former times, from the truthful character of the records, its use was often attended with a strikingly good result. We read of persons sitting up in bed with great oppression of breathing, their faces gorged with blood, and the surgeon coming in with his lancet, bleeding in a full stream, and immediately quieting the respiratory process and relieving the circulation. In such cases there may have been pneumonia, bronchitis, or heart disease, but the results were nevertheless the same. This seems to show that in cases of great engorgement of the lungs or of the right side of the heart bleeding will afford relief, and therefore in similar circumstances I should advise you to have recourse to the measure. When you find the venous system gorged in primary affections of the lungs, or in secondary congestions, as in heart disease, or from paralytic conditions, as in apoplexy, you cannot be wrong in bleeding ; you relieve the venous system as well as the heart, and allow the circulating apparatus to right itself. The objection sometimes made that the patient is too weak, as indicated by the pulse, is futile, since, owing to the small amount of blood which reaches the left ventricle to be propelled onwards, the pulse is naturally small." Again, in my lectures on "Diseases of the Nervous System," I devote several pages to the consideration of bloodletting and its use when the lungs are gorged from paralysis of the chest or other cause. I may make the following quotation :—"Many of you saw the case of epilepsy

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which one of my clerks bled a few months ago. The man was a strong agricultural labourer, and came here suffering from severe epileptic fits. One afternoon, on going round, we were informed that he had never been out of a fit for four hours. We found him lying in bed with constant convulsive movements, but the most striking and alarming condition was the engorgement of the lungs and the increasing lividity of the surface of the body. I requested that he should be bled, and one of you, wishing to distinguish himself at his first attempt, or from the lancet being over sharp from disuse, fulfilled my object to the utmost ; the blood poured out in a torrent, the face rapidly became pale, the man opened his eyes and spoke for the first time since the morning, the interval having been a blank to him. The effect was the most striking I have ever witnessed, and it is worthy of note also that he had no fit for a long time afterwards."

It was very early in my student days that I was impressed with the value of bloodletting. I accompanied a general practitioner to see a little boy suffering from bronchitis after whooping-cough. He was lying half raised on a pillow gasping for breath, his face livid, eyes starting out of his head, and the superficial jugular making itself most apparent. The doctor, after gazing at this vein and feeling it, pulled out a lancet, and, in spite of the protestations of the father, opened it and let out several ounces of blood. The lividity passed away, the child sank back on the pillow in a tranquil sleep, and from that time speedily recovered. I have no records by me of the cases in which bleeding was adopted, but certain instances are deeply rooted in my memory. For example, a young woman was brought into the hospital in a dying state, gasping for breath, and livid ; there was a mitral bruit, engorgement of the lung with hæmoptysis, albuminous scanty urine, and dropsy. We bled her from the arm, and the effect was immediate ; the breathing became tranquil, lividity passed from the face, and improvement continued from that time. In cases of uræmic convulsions, the effects of bleeding are very striking ; the right heart is relieved, and poisoned blood is removed from the system. One case of this kind, indelibly fixed in my memory, is that of a neighbouring dressmaker, who, I believe, is still alive. I was asked a few years ago to see this patient early one morning by her medical attendant, as a satisfaction to him and her friends ; she had been in convulsions all night, but he did not wish to disturb me before daybreak, believing the case to be hopeless. I found a middle-aged woman in constant convulsive movements, froth issuing from her mouth, quite comatose, and almost pulseless. The whole body was livid, and the extremities cold. The doctor said she was dying, and allowed me therefore to bleed

her. I took away a small wash-hand basin of blood, and while flowing the lividity passed off, the convulsions ceased, the body gradually became warmer, and when I saw her in the middle of the day she was calm and conversed with me. Her life was as clearly saved by the bleeding as if I had dragged her drowning out of the water ; and this is more than I can say from the use of drugs. Dr. Ogle writes that little was said at the discussion about the use of leeches and cupping. I can remember a good example of treatment by each method. I was once asked to see a well-grown child, a year old, suffering from inflammation of the lungs. He was lying on his mother's lap, respiration being from fifty to sixty a minute, with deep episternal and hypogastric depression, inflated nostrils, lips blue, &c. The medical man said he formerly should have leeched, but now waited for my sanction. I assented, and two leeches were applied. Believing that the child was too far gone to be relieved by any measures whatever, I was much surprised to be requested to see him again on the following day. I then found him breathing tranquilly, and comparatively well. The leeches had taken, and the bleeding had continued some time afterwards—in fact, much more than the medical man desired. It was, however, effectual.

As regards cupping, I have seen it so often done in former years in hospital practice with advantage that I cannot recall any individual cases, but the last case in private in which I saw cupping performed was in consultation with Mr. Parrott, of Clapham, shortly before his death. The patient was a middle-aged, stout woman, the subject of chronic bronchitis. She was sitting up in bed with great dyspnœa, no expansion of lower part of lung, and considerable blueness of the face. Mr. Parrott said in former years he should have cupped her, and informed me that he had paid special fees to Mr. Hills, of Guy's Hospital, to learn the art, and he considered himself an adept. I willingly consented. He hastened home, brought his glasses, and applied them *secundum artem* (four in number) between the shoulders. He commented on his dexterity, and how he had removed the cups without leaving a drop of blood on the skin or the linen. We all stood in admiration at his adroitness, and gazed alternately at the relieved countenance of the patient and the satisfied expression of the doctor. Although she was not *in extremis* I believed the cupping saved her life, as she was daily growing worse.

I wish we had a more simple means of relieving the gorged portal system than incising the liver, as recommended by Dr. George Harley. Every one must have seen the relief to the patient with cirrhosis after hemorrhage from the bowels. One case I shall never forget. A middle-aged woman, an inebriate,

was, when I was asked to see her, in an apparently dying condition. She had a very large liver, was covered with purpura spots, and was bleeding from the gums and mouth. The consultation was a mere formal one, and therefore I was much surprised to hear that she was still alive two days afterwards, and that I was requested to see her again. I did not recognise her, so altered was her appearance ; her blotchy face had become pale, and while regarding her I was asked to look at a row of four chamber vessels arranged along the wall of the room. They were all full of dark blood. The melæna saved her life, and she lived, I was told, some time afterwards. Besides the mere question of the value of bleeding in the mind of a medical man, there are two other considerations which influence him in his procedure. There is first his own personal reputation to be thought of, for just as the fashion of our forefathers was to "knock down" disease by every lowering measure, so the modern fashion is to "support" the patient. Consequently, if the latter died after bleeding, the doctor knew he would be blamed ; but if he killed his patient by over-feeding, alcohol, or drugs, he would be thanked as having done his best. The other objection to bleeding which many men have is that they do not know how to do it; much less can they cup. I am sorry to say that I have usually had to perform the simple operation of venesection myself.—*The Lancet, May* 23, 1891, *p.* 1139.

2.—ON ARSENIC AS A DRUG.

By Jonathan Hutchinson, F.R.S.

There are certain forms of skin disease against which arsenic appears to possess specific power. They yield immediately to its influence, and with the most astonishing certainty. Of these, the condition known as pemphigus diutinus or persisting pemphigus stands foremost. As a rule, no fresh bullæ are produced after the administration of the arsenic has been commenced, and the patient quickly regains health, with perfect soundness of skin. There are, I am aware, a few exceptional cases, especially those which occur in elderly subjects and those which are complicated by disease of the mucous membrane of the mouth.

There are a few other rare affections of the skin concerning which one can speak with the utmost positiveness as regards the prompt efficiency of arsenic in their cure. I possess a portrait of a very typical case of the rare malady known as dermatitis herpetiformis. The woman who was its subject had the skin of her trunk and limbs covered with a vesicular eruption which resembled herpes zoster in its corymbiform

arrangement. I had this woman under observation for six or seven years on account of repeated relapses of her disease. She was always cured in the most definite manner and very quickly by the use of arsenic. A boy who was the subject of one of the plates in the New Sydenham Society's Atlas suffered severely from an erythematous eruption of a peculiar type, which developed on his limbs and trunk, and which never yielded until arsenic was given, when it disappeared with the utmost promptitude. His mother finally got into the habit of giving him the mixture whenever she noticed that his temper was irritable, as this symptom was a sure precursor of his eruption. I believe that he finally got quite rid of his liability.

A man whom I have recently had under observation had suffered for many years, and in spite of much treatment, from an intensely pruriginous and vesicating eruption possibly allied to pemphigus. When he came to me he had, singularly enough, never had arsenic given. Its effect was magical. The little bullæ ceased to appear, the itching ceased, and, as he could now sleep well, he rapidly improved in health. Contrary, however, to what is generally observed in common pemphigus, we have been quite unable to leave off the drug. If it is suspended, the invariable result is that in a few days the skin begins to itch again, and some fresh vesicles are produced. We have been obliged also, in order to maintain the cure, to increase the dose, and to give it in quantities larger than the patient can suitably bear. In connection with this liberal administration of it, I have had repeated opportunities of observing its effect upon the palms and soles. It makes these burn and itch and perspire. In the instance of the soles, the profuse perspiration has on several occasions caused the epidermis to become sodden and to peel.

In the treatment of common psoriasis, although the effect of arsenic is quite as definite and certain as in pemphigus, it is not nearly so immediately curative. Sometimes its effects are first manifested by the patches taking on a congested condition and becoming very irritable. In a large majority of cases it will in the end, if well pushed, cause the eruption almost wholly to disappear. It seldom or never, however, brings about a complete cure, and of late years we have been so much accustomed to reinforce it by efficient local measures that it is not always easy to estimate the proportion of our indebtedness to it. I believe that both its efficiency and its safety are in ratio with the youth of the patient. My own experience as regards the effect of arsenic in lichen planus has not been by any means uniform. In some cases it has seemed to do a great deal of good, whilst in others the eruption got worse while it was continued, and disappeared satisfactorily when tartar emetic was substituted for

it. I have never seen this eruption yield to arsenic in a definite and rapid manner.

If you ask me as regards the value of arsenic in eruptions of the eczematous type, I must speak with great caution. My impression is that, if given in anything like full doses, it usually irritates and makes the eruption worse. If given in minute doses it certainly does not always hinder the cure by local measures, but it is very doubtful if it materially helps it. In cases of common acne, sycosis (non-parasitic), and various other chronic affections of the skin we are, I expect, most of us in the habit more or less frequently of adding small does of arsenic to the rest of the remedies used. Even in the cryptogamic affections, more especially in chronic ringworm, some are inclined to put a certain amount of confidence in it. There is a general impression abroad that under all morbid conditions of the skin arsenic has a tendency to improve its nutrition. Thus, it is supposed to brighten the complexion, make the skin more transparent, and give glossiness to the hair. If it does really effect these objects—concerning which point I may confess to some doubt—they are to be brought about, I feel sure, only by using it very sparingly.

The observations just made may suitably lead us to discuss the question as to whether arsenic is a tonic. In certain morbid conditions—those, for instance, in which pemphigus and herpes are prone to occur—it certainly has a tonic influence, and the general health improves wonderfully under its use. It may, however, easily be the fact that this does not prove that it is a direct tonic, but only that by removing a troublesome and irritating disease it favours general improvement of health. Of this, however, I think we may feel quite sure, that if arsenic is to act as a tonic, everything depends on the smallness of the dose. It has been my almost invariable experience in patients in whom we had pushed it for the cure of any special disease, that they were very willing to leave it off, having usually felt languid and out of health during its continuance.

I have formed an unfavourable opinion as to the influence of arsenic upon elderly persons, and, unless the disease imperatively demands it, I never prescribed it for them. More especially is caution, I think, necessary if any symptoms of nerve degeneration are present. An old gentleman who suffered from paralysis agitans was, as I have good cause to remember, invariably made worse by the very smallest doses of arsenic. It is remarkable how very seldom in the young or middle-aged we encounter anything of the nature of idiosyncrasy in reference to arsenic. At any rate this is, I think, true as regards its first use; there are a certain class in whom long continued use instead of producing tolerance appears to have the opposite effect.

With the young arsenic appears usually to agree well, and even very young children, although they but seldom need it, will bear full doses without any ill effects.

Amongst the facts which have been thoroughly established as regards the possible effects of arsenic, we may, I think, now claim that it is an undoubted cause of peripheral neuritis. Its influence in inducing herpes zoster when given for the cure of other skin diseases affords us the most common example of this. It is, however, by no means the only one. It has been observed by those studying cases of poisoning by arsenic, and is especially noted by Christison, that local and unsymmetrical forms of paralysis not very infrequently result. During its medicinal use patients not infrequently complain of local numbness, more especially of portions of the skin of the lower extremities. Numbness and tingling of the soles of the feet are by no means infrequent symptoms.

It is a very important question, especially in reference to chronic skin diseases requiring its use during long periods, whether arsenic is prejudicial or otherwise to the general health. I have had under observation many patients suffering from psoriasis or lupus erythematosus, who have taken it more or less continuously for several years. My impression is that if given in small doses, with the exception of the risk that it may cause shingles, its effects are usually inappreciable, and that there is no danger of its cumulative influence. If arsenic be given in full doses for long periods, although it may be doubted whether there is any reason for styling it a cumulative drug, yet I am sure that its employment is not without danger. There are certain symptoms which ought to lead us to take alarm. If the patient has numbness and tingling in the palms and soles, or if there is numbness of any particular part of the skin, or if there is decided loss of flesh, then it ought to be suspended. Irritation of the conjunctiva is, of course, a well-known symptom of disagreement; but, in my experience, it has not been observed so frequently as some of the others just mentioned; and to them I must add liability to diarrhœa, and, in a certain number of cases, extreme irritability of the bladder. I cannot conceive of a patient receiving any general injury to health from arsenic whilst remaining under regular medical supervision, for the symptoms never set in suddenly. If, however, a patient who has experienced great relief for his skin affection has obtained a prescription which he uses on his own responsibility, and with, perhaps, considerable increase of the dose ordered, it is then possible that serious, or even fatal, results may ensue.

A few words must be said as regards the influence of arsenic on the skin of persons previously in health. When it is given

for the cure of skin diseases it is sometimes difficult to tell whether the results are due to it or are parts of the original malady. Now and then, however, we have opportunities, when it is prescribed for maladies quite apart from the skin itself, of observing results concerning which there can be no fallacy. Such, for instance, occur when it is prescribed in order to delay the growth of cancer, or for the cure of chronic disease of the nails. Its effects upon the nutrition of the skin in such cases (supposing the doses to be large) are usually, I think, that the skin becomes brown and muddy-looking ; it is also dry and harsh on the trunk and limbs generally, although there may be perspiration in the palms and soles. The discoloration may be attended with actual pigmentation, and may increase until it almost resembles the tint of Addison's disease. In extreme cases not only is there dryness and discoloration, but scaly patches may form on the knuckles, elbows, and knees, much resembling common psoriasis, but less well circumscribed. A much commoner result than this is, however, disturbance of the nutrition of the skin, not over the body generally, but over the palms and soles only. On these parts in addition to dryness, corns may form, and in certain very rare cases these corns pass on into epithelial cancer. A peculiarly dry condition of the palms and soles, with tendency to the formation of corns, is by no means an infrequent result of long-continued courses of arsenic, and should, I think, always lead to its discontinuance.

Certainly, one of the most remarkable facts as regards the influence of arsenic is that it appears to prevent certain affections which are very similar in nature to those which it causes. There are certain rare cases in which herpes recurs over and over again in the same locality ; and respecting these I can speak with the greatest positiveness that the liability to recurrence is usually suspended during the continuance of arsenic. I am speaking of cases in which the herpes occurs on the skin, and is grouped exactly like zoster, although usually more limited in extent. The far more common forms of recurrent herpes which we see on the genitals, on the lips, and sometimes inside the mouth, are, I believe, just as definitely under the control of the drug. The latter must, however, be steadily continued. One of the most convincing proofs that the arsenic is really the means of arresting it is that the eruption recurs when it is suspended.

Thus, then, whilst I think that we may hold that our clinical knowledge respecting this powerful and most important drug has much advanced during the last quarter of a century, we cannot claim to have made any discovery as to its mode of action. We know for certain that it will cure psoriasis,

pemphigus, and their allies, and that it will prevent the recurrence of recurrent herpes and many other relapsing maladies. We never cease to wonder at the extreme rapidity and certainty with which, in some of these, its effects become manifest. How those effects are brought about, however, we cannot even guess. We know also that it may, whilst curing some diseases, produce others, and that herpes zoster is one amongst several different type-forms of peripheral neuritis which may result directly from it. That it has some peculiar affinity for nerve tissue, and some peculiar influence upon nerve function, we may safely believe, but further than this we can scarcely go. As regards its general employment as a remedy for skin diseases, whilst recent observations have strengthened our faith in certain directions, they have limited it in others, and they have impressed upon us the great need of caution. They leave us with the practical creed that we may, as heretofore, freely avail ourselves of its services, but that we must, perhaps rather more than has heretofore been felt necessary, watch its effects, and be prepared if need be, to forbid its further use.—*The British Medical Journal*, *June* 6, 1891, *p.* 143.

3.—ON THE USE OF WATER IN GOUTY AND OTHER CONDITIONS.

By T. Lauder Brunton, M.D., F.R.S.

[In the course of his interesting Cavendish Lecture on Eliminations and its Uses in Preventing and Curing Disease, Dr. Brunton makes the following important observations upon the ingestion of water :]

Gouty people are accustomed to trust to baths and watering-places of all sorts for relief, and no doubt a visit to Homburg, Aix-les-Bains, Carlsbad, Marienbad, Brides-les-Bains, Baden-Baden, Wiesbaden, Harrogate, Bath, or Strathpeffer will all greatly improve the health, and often protect patients from gouty symptoms for many months, or even years, afterwards.

In visiting all these watering-places one is struck by the diversity of the constituents of all those world-famed springs, and the constancy of one ingredient, namely, water. In watching the patients one sees that people who at home never touch a drop of water pure and simple from year's end to year's end, taking it only in the form of wine, beer, tea, or coffee, will, at a spring, drink tumbler after tumbler of water containing common salt, with minute traces of other things—as at Wiesbaden or Baden-Baden—or the same constituent with rather more lime-salts at Homburg, sulphate of soda and carbonate of soda at Carlsbad or Marienbad, or sulphuretted

hydrogen—as in Aix-les-Bains, Harrogate, or Strathpeffer. I do not mean to say that the saline or gaseous ingredients of these springs are without effect upon the organism—far from it—but at the same time I feel quite convinced that very many people would never require to go to watering-places if they would drink more water at home.

Water is the most universal solvent in the world. It is not only useful to wash out our closets and flush our drains, it has a similar effect in our bodies, and tends to wash away the waste products from the cells of which our organs are composed, to clear out the uric acid, urea and phosphates through our kidneys, and thus prevent renal or vesical calculi, and also to wash out our liver and prevent gall stones, while it helps to keep the bowels in action. The liver especially is an organ which suffers much from want of water, and I never see a gall stone without asking the patient, "How much water do you drink?" Almost invariably the answer is, "I hardly ever touch water. I am not a thirsty person," and on one occasion a lady called for a particular teacup, which held little more than a thimbleful, in order to show me how much she drank. On reckoning how much water she took in the twenty-four hours it came, as nearly as I could calculate, to sixteen fluid ounces. What wonder then that she had a gall stone. The poor liver had not a chance to make decently fluid bile, and naturally there was a deposit. By making such people drink a big tumbler of water, and especially hot water, every morning, with or without some Carlsbad salts added to it, and, if necessary, repeating the hot water once or twice more in the day, the renewed formation of gall stones may frequently be averted, and symptoms of biliary colic, to say nothing of so-called biliousness, may be prevented for many years, or perhaps entirely. But some patients will not do this at home, and if you were to tell a fashionable lady to get up at six o'clock in the morning and walk round Grosvenor Square with a tumbler of hot water in her hand, taking a sip at it every three steps, to go on doing this for an hour together, then to buy at a confectioner's a penny roll, and eat this without butter for her breakfast, with a small cup of coffee and nothing more, she would probably laugh in your face, or apply to some one else for advice. But all this and more you secure by simply advising her to go to Carlsbad. There she finds everybody else doing the same thing, and instead of marching round and round all by herself, or accompanied only by little boys who might point the finger of scorn at her, she finds herself in the company of all the fashionable visitors to the bath, and marches to the music of a brass band. The company of others enables her to carry through the tiresome process, and to comply with the

troublesome restrictions, while the benefit she is sure to derive from it probably makes her feel so strong and happy that she swears by the place ever after, and returns to it again and again. For people who can afford it a visit to such places supplies the best means of cure, but for those who cannot an excellent substitute may be found in the daily consumption of hot water, if they will only have patience and perseverance in its use.

The process of washing out is not only useful in biliary calculus, it is of the utmost value in preventing renal gravel and calculi. The process may be carried on at home by means of hot water either alone or with the addition of a small quantity of some saline, such as bicarbonate or nitrate of potash. In cases where the patient dislikes hot water alone, a slice of lemon thrown on the top of it gives it a slightly agreeable taste, and may overcome the patient's repugnance.

The two watering-places where patients with renal calculi chiefly go are Wildungen and Contrexéville, with its neighbours Vittel and Martigny-les-Bains. What strikes one in the waters of these places is that, in addition to other salts, they contain a very minute trace of iron, which appears certainly to be beneficial to the patients. It is supposed to act by astringing the mucous membrane of the pelvis of the kidney, and so allowing calculi to slip down more easily.

There are several other methods of cure which I believe owe their virtues to the fact that they produce pretty complete elimination of waste products by causing the patient unconsciously to imbibe a large quantity of water. These methods are the grape cure, the whey cure, and the milk cure. For the grape cure the patient resorts to some warm, sunny place, where the grapes grow well, and there eats many pounds in the course of the day, while other articles of diet are correspondingly diminished. The ripe grapes contain an enormous proportion of water and very little solid matter, so that the grape cure really comes to be a combination of water drinking and semi-starvation, greatly resembling the Carlsbad cure, to which an additional likeness is given by the laxative effects of the alkaline tartrates contained in the grape juice. The whey cure is very much the same, with the exception that, instead of eating grapes, people drink whey, and that the climate where the cure is carried out is usually a high and bracing sub-alpine one, instead of being soft and sunny. The milk cure is one frequently used in this country with great advantage, more especially in cases of typhoid fever, in chronic diarrhœa occurring in persons who have come from tropical climates, in glycosuria, albuminuria, and some cases of heart disease. Its advantage in typhoid fever is so universally

acknowledged that one need hardly say anything about it, but I think it is possible that its efficacy may not be due merely, as is usually supposed, to the milk supplying a bland and non-irritating diet, but may possibly be due also to the waste products of the organism being washed out by the large amount of water which is either contained in the milk itself or added in the form of lime water or soda water to it. The results of an exclusively milk diet in chronic diarrhœa are sometimes quite astonishing, and a few months ago I had a letter from a patient who had been suffering from it for ten years, had tried all sorts of medicine in vain, had just come back from Carlsbad worse than he went, and had nearly given up hope of cure. I saw him only once, and told him that the medicine I gave him might do him good or might not, but that if he did not get well his only hope was to put himself on milk and milk only. This treatment, as he informed me by letter months afterwards, cured him as if by a charm.—*The British Medical Journal*, *June* 20, 1891, *p.* 1323.

4.—ON THE VICISSITUDES OF OPIUM.

By Samuel Wilks, M.D., F.R.S.

When a student, between forty and fifty years ago, I was taught that opium was a remedy of the most potent and valuable kind, having of necessity a widespread utility owing to its action on the nervous system whereby it diminished the functional activity of every organ of the body, whether this was brain, liver, kidney, intestine, or uterus. It consequently lessened the wear and tear of the tissues, and so tended in many conditions to sustain or prolong life. In a similar manner it would arrest many morbid actions depending upon acute cell growth, as in inflammations, and was a remedy, therefore, in all diseases terminating in "itis." This was illustrated by cases which could be confirmed by the eye, as the rapid subsidence of a sore throat under a dose of laudanum, or the quickly healing large sloughing ulcer in the leg under the continued action of the same drug ; a treatment, I may remark, largely pursued by Mr. Aston Key. What I was then taught I have never had any reason to dispute ; for a long practice has confirmed me in the truth of these doctrines, and I have continued the use of opium and morphine as heretofore, having found no other drugs to replace them.

How often, therefore, must have been my surprise when meeting sometimes intelligent and well-educated young men, in consultation over acute cases of disease, to be informed that they had not prescribed opium because there was no pain or

sleeplessness to warrant its use, never having heard that the drug was administered for any other objects than to relieve these symptoms. And not only have I found this ignorance of the best properties of opium, but with some medical men an actual dread of it, some ill-defined fear of its excessive harmfulness so as to make it a drug to be avoided by all possible means, and that every substitute should be thought of in its stead. Thus, even in cases of pain and insomnia, I constantly find numberless drugs, including chloral, sulphonal, bromidia, exalgine, cocaine, &c., given in vain, when a grain of opium has had the desired result. The attendant has afforded me no further explanation of his conduct than that "he dare not give opium." For my own part I have seen more evil results from the long-continued use of chloral and bromides than from opium. In cases where the respiration is involved the fear is explicable, but then very often groundless. It is well known that opium in large doses has the effect of lowering the respiratory process and drying up secretion in the bronchial tubes; therefore judgment is required in its administration; but, speaking from my own experience, I have no hesitation in saying that opium has been one of my most valuable remedies in the treatment of chest disease. In pneumonia I have been in the habit of prescribing solid opium and Dover's powder three or four times a day, or laudanum or morphine in the liquid form. The late Sir W. Gull never abandoned the use of opium in pneumonia. In pleurisy it is absolutely necessary in many acute forms, and in chronic cases of empyema, where drainage has been practised, the life of the patient during a very protracted illness could never have been endured without the daily use of opiates. Then, again, in bronchitis the fear of opium is very widespread. When I suggest its use I am met by the remark that it will stop secretion and kill the patient, and that remedies are being given to promote secretion. When I hear such a vague assertion without discussing the merits of the case, I am wont to make another general assertion of a like kind, that I want to stop secretion and not promote it, just as I should try and arrest cell growth in pneumonia and not try to promote it. So widespread is this fear of opium that I have seen it stated in a medical work as an aphorism, "Never give opium in chronic bronchitis." I call this erroneous and absurd, for no reason is given why in chronic catarrh of the bronchial tubes the object should be to promote the process rather than check it. The secretion which accompanies heart disease does, I believe, relieve the lung; but this is altogether another matter. I will only mention one example amongst many of the value of opium in bronchitis. An old gentleman, between 70 and 80 years of age, had been suffering long from bronchitis;

he expectorated a large quantity of mucus, was constantly coughing, and had, in consequence, most restless nights. My suggestion of an opiate to the medical man was met in the usual way—the fear that it would stop secretion, and be followed by a rapidly fatal result. We, however, at last agreed to give a full dose at bedtime, and to meet on the following day. We found the patient delighted to see us, and he expressed his thankfulness for a good night and cessation of the cough. The expectoration had ceased, and scarcely a *râle* could be heard in the chest. From that time he recovered. I am fully aware how susceptible children are to opium, and with what caution it must be given. I remember two cases of so-called inflammation of the lungs in children where an overdose was given, and the patients lay for hours in an insensible and most precarious condition. When they did recover, however, from the effects of the opium, their bronchitis was gone. In disease of the heart the cases are too numerous to mention in which I have seen the efficacy of opiates. For example, one is called to see a patient sitting up in his chair with dropsy, dyspnœa, and the usual symptoms. The main complaint is the awfully restless night which he looks forward to with horror. As soon as he feels sleepy and nods his head he starts up with a gasp ; in these circumstances the medical man says he fears to give a sedative, for if he sent his patient to sleep his nerve centres would no longer respond to this sense of breathlessness, and he would die. Having very little knowledge of scientific therapeutics I do not discuss the question, but I recommend a night draught of a quarter of a grain of morphine. I do not remember a single case of any harm resulting, and the experience of its success is overwhelming. The heart itself is often benefited, for every medical man must have seen cases where inordinate action of the heart was quieted by an opiate.

Then, again, in Bright's disease, I have every reason to remember the value of opium, owing to the very general and widespread fear of its use. I believe those who are considered authorities have spoken of the great susceptibility of patients suffering from this malady to its influence, and, therefore, without contradicting them, simply state that nothing in my own experience has led me to confirm it. I have, therefore, no hesitation in giving opium or morphine when I find a patient sleepless and restless, as is often observed in old cases before the access of the more marked uræmic symptoms. I have given it with the best effects.

My greatest difficulty in the use of opium has been owing to the idiosyncrasy of the patient, rendering some persons remarkably susceptible to its operation, and these have usually

been members of the same family. I allude to the action on the heart and the tendency to syncope. On the other hand, there are those who may be said to live on opium—a violent neuralgia, sickness, and even want of appetite, are all speedily removed by an opiate. One example will suffice. A lady had been kept awake all night by a violent, crushing headache and constant vomiting ; she had a dinner-party coming off, and considered herself, therefore, most unfortunate. When I saw her in the morning I injected a quarter of a grain of morphine in her arm ; in ten minutes she was tranquil, then went to sleep, woke to have her tea, and was ready in the evening to receive her guests at dinner as well as ever. I could relate many such instances.

I need not particularise the large number of nervous diseases in which opium constitutes a most valuable remedy, but merely mention a case lately under my care. An old gentleman had fallen into a melancholia ; he felt himself a ruined man, would not eat, was constantly moving about, and had little rest at night. For the insomnia, chloral, bromides, sulphonal, paraldehyde, &c., had been given. The medical man would not give opium for fear of "locking up the liver." As, however, I did not fear instant death from such a result, I persuaded him to give the patient a quarter of a grain of morphine every night. This was done, it quieted the patient's nervous system, and in a few weeks he had recovered.—*The British Medical Journal, June* 6, 1891, *p.* 1218.

5.—ON THE TREATMENT OF ANÆMIA.

By James F. Goodhart, M.D., F.R.C.P., Physician to Guy's Hospital.

Anæmia is a wide subject, and is a symptom of many diseases. I do not propose to deal with it when thus *symptomatic*, but only when it is a substantive affection. And, even thus, I shall not take it in its entirety, for there is anæmia on the near side of middle life which requires one method of treatment, and there is the anæmia which, on the whole, affects the declining half of life, which is styled *pernicious* and which requires a different handling. It is to the anæmia of young adults, and, almost without exception, of women—the disease that has received the name of chlorosis, but which is not always by any means chlorotic—of which I am going to write.

One may feel inclined to ask, "What is there in this subject that we do not already know?" To that I would reply: Probably, nothing ; but it is a subject on which men who are entitled to an opinion differ considerably as to the right treatment, and therefore anyone who has convictions on the subject,

one way or the other, is at liberty to air them. Not so very long ago no less an authority than Sir Andrew Clark read a paper on this subject in which he contended that anæmia was the result of the constipation which is its common accompaniment, and he advocated purgatives rather than iron as *the* remedy, although he *did* combine a little iron with his aperient pill. That paper traversed one of my most cherished convictions. There are not many occasions in medicine on which, perhaps, one can say, "I *know*," unhampered by any serious qualification. But, having been interested in these cases for many years, and having tested what I say in scores of cases, I venture to say I *know* that iron given properly will cure many of them and that attention to the constipation alone will not. I do not deny that the constipation is an important element in many cases and that it may make the anæmia worse, but I am certain that it is not the primary factor ; that the anæmia is *not* essentially a result of fæcal absorption. But there are certainly some who think that iron will not cure all cases. Then I say, that is because one or two considerations are lost sight of, and, as regards iron, because it is not given properly.

Now, treading upon a man's pet corn is not a bad way of causing a little excitement ; therefore, let me mention certain common ways of giving iron which, as regards this disease, are not what I call giving it properly. Giving a dose of dialyzed iron three times a day is one of these. Many people are very fond of this preparation of iron ; and when it was first introduced dialyzed iron seemed to me to promise well, for it was a mild preparation which might be expected to be taken without upsetting the digestion. I tried it extensively, and came to the conclusion that it was of very little use when compared with other preparations. "It won't do any harm," as a celebrated physician once said of a remedy to a lady of my acquaintance. "Thank you," said she ; "I did not suppose that it would, but that was not exactly my purpose in coming to you." To order dialyzed iron is, as far as I know, playing with the remedy and wasting time. The mist. ferri comp. of the British Pharmacopœia is an *old-fashioned*, but, as far as it goes, a good medicine ; but here, again, to give an ounce of it three times a day does not satisfy the requirements of most cases, for it only contains the equivalent of $2\frac{1}{2}$ grains of sulphate of iron in carbonate to the ounce, and, although the better for this, patients are not thoroughly renovated, even after a protracted course of the drug. The sulphate of iron, again, is a good remedy, and has the great advantage that it can readily be combined with an aperient in a pill. But, good as it is, it has the drawback that it is difficult to raise the dose to the amount that I contend these patients require, for it has a tendency to act as an emetic.

However, it *can* be pushed, if care be taken to do this slowly and steadily, for, like sulphate of zinc, tolerance is easily established and a sufficient dose can then be given. Some, again, are fond of the perchloride of iron, and it, also, is a valuable hæmatonic ; but with *it*, even more than with the sulphate, the stomach is not tolerant of large doses in these cases, and, therefore I do not give it. Some preparation, therefore, is wanted that *can* be given in *large* doses without disturbing the stomach, and, to my mind, such preparations are chiefly *two:* the saccharated carbonate of iron and the ferrum redactum, or reduced iron. There are numbers of people who will tell you that they cannot take iron, but it is seldom, indeed, that they have any difficulty with either of these preparations. They may either of them be given in half-drachm doses or more three times a day, and they may be given in pill or powder or lozenge. The powder is the least troublesome, and there is seldom any difficulty in thus administering it, if the patient be forewarned that, although dirty to look at, it is not bad to the taste. There are many people who cannot take pills ; those who cannot will nearly always take the powder, and those who cannot take powders will take any amount of pills—indeed, the more the merrier. Perhaps I may be allowed to add that the pills should be made up with glycerin of tragacanth and coated with some of the soluble coatings now in use, lest they should pass through the intestinal canal unappropriated and the remedy thus come unjustly to be looked upon as a defaulter.

But there is yet another point about the iron treatment that is often not sufficiently insisted upon, viz., the *duration* of the course. Hundreds of anæmic people apply for treatment, and we ask, Have they taken iron? Oh, yes, say they, they are always taking it, and it does them no good. But when we come to inquire, they have taken a bottle, or perhaps two, and then left off for awhile. The average specimen of humanity still looks for his cure in his first dose, or, at least, somewhere within the depth of a six-ounce bottle ; but it is needful to say that anæmia is not to be cured in so ready a fashion, and half the battle lies in a fair start. In dealing with these cases I always ask them, Are you prepared to carry out the requisite treatment? They, of course, profess themselves ready to do anything ; whereupon I make them promise to take their medicine continuously for six weeks. Half-drachm doses, then, of the saccharated carbonate of iron or of reduced iron, given regularly three times a day over a course of six weeks, I consider to be so successful that I never can find heart to waste time (as I believe it is, for the most part) on other means of treatment, whether it be by potassii permanganatis or what not. Nevertheless, iron is a remedy that is not always

successful in private practice. I have seen many cases, now, where I have been obliged to acknowledge that the iron treatment has been carried out in all respects properly, and yet the patient has not recovered her colour satisfactorily. And in thinking the matter over there seems to me to be a difference in this respect between hospital cases and those in private. I look over the former and cannot remember one that has failed, and the only difference that I could think of was this, that they are invariably put to bed as soon as they come into the hospital and that they are also fed with at any rate a reasonable quantity of nourishment. In the better-class patient it is too often considered necessary only to give so much physic; food and exercise being left to the individual discretion.

Happily, Nature has some pretty stiff automatic checks, and the breathlessness of the anæmic is one of them; were it not so, anæmia of this sort would be a far more fatal disease than it is. But how can these patients expect to get well when they are so bloodless that they have nothing inside them to do a day's work upon, and yet they attempt to do that work. And what is that day's work? Well, "there is nothing the matter with them," so they do, after a fashion, much as other people do—that is to say, they think or are told that fresh air is good for them, so they drag themselves out to shop and walk. It is quite common to find young ladies thus affected going to early services at church, visiting in parish work, and as to not going to a dance because of their ailment, it would never occur to them for a moment. But after all, their chief exercise and exhaustion comes, I am persuaded, from the quite unnecessary tread-mill exercise they perform for the hundred and one things that they want which are downstairs when they are up and upstairs when they are down. And what do they do this upon? Generally no breakfast—a cup of tea they consider a sumptuous meal; a finger of meat, perhaps, for lunch, and, perhaps, again for dinner at the urgent importunity of their relatives; and if they are particularly well looked after these tiny meals are supplemented by an intervening sup or two of beef-tea, whose one grand virtue is that it has been stewed so long that you can "cut it with a knife."

To summarise, these cases, if at all far gone in the bloodless condition, require :—

First, absolute rest in bed for ten days or a fortnight—three weeks is none too much for some cases—and they should not be allowed to take much exercise of any kind for the six weeks that their treatment lasts.

Secondly, they must be fed with good, wholesome food—four meals a day—beginning with milk and egg, which can be taken in the fluid state, and thus stowed away almost regardless of

appetite. Good meat and vegetables can soon be added, and each meal should see some addition until a reasonable quantity is taken.

Thirdly comes the iron, as already detailed ; and,

Fourthly, any mild aperient that may be necessary.

It is not my purpose to advert to the dangers that attach to the anæmic state. Whether they are few or many it cannot be that this disease is an unimportant one, although it is so common and so generally remediable that one might well think it so. Unfortunately, it is so very common that the public have no idea of its importance as a disease, and therefore it requires some courage to send a patient to bed for a fortnight, and to prescribe a Lent where physic shall replace the accustomed fasting.

But as I am dealing with the point of curability of these cases, I should like to say that I have several times seen it stated that in distinguishing between pernicious and this form of anæmia that the pernicious form tends to relapse ; the chlorotic form, not. This has not been my experience ; quite the contrary. These cases frequently relapse after a time, and it is necessary to tell them that it will be so, and that at the first indication of pallor or breathlessness, or, it may be, amenorrhœa, they must return to their remedy for a short course of three weeks or so. It is a curious disease, and, I believe, has a large nervous element as a factor in its production ; but this I feel sure of—that, by its obstinacy and its tendency to relapse, it betokens a rather important constitutional vice, and that it is not a mere intercurrent affection that is treated and done with.—*The American Journal of Medical Sciences, September*, 1891, *p.* 238.

6.—ON THE CLINICAL VALUE OF STERILIZED MILK.

By Edward P. Davis, M.D., Professor of Obstetrics and Diseases of Children in the Philadelphia Polyclynic.

Some three years ago, during a summer service at the Philadelphia Hospital, the writer introduced sterilized milk as a food for infants. The milk ordinarily furnished to the hospital is subjected to a lactometer test before acceptance, and is of a commercially fair quality. Reasonable care is exercised in handling this milk, and it may be taken as rather better than the average milk obtained in summer in a large city. The sterilization was performed by the usual method, the bottles being corked with cotton, and the milk sterilizing for half an hour. The class of children to whom it was given affords an excellent opportunity to test the nutritive value of any food substance. Some were foundlings, the majority breast-fed children, oftentimes born of ill-nourished or diseased mothers whose milk was not proper food for their offspring.

Sterilized milk was diluted in varying proportions, and was fed in quantities suitable to the age and development of the child. At the same time that this milk was introduced as a food, antisepsis was employed in the hygiene of the child, and in the treatment of its digestive disorders. All possible cleanliness was observed about the infant ; its diapers, after being washed, were wrung out in a dilute solution of bichloride of mercury. If diarrhœa supervened, the intestines were thoroughly irrigated with boiled water, a solution of sodium salicylate one grain to the ounce, or a dilute solution of thymol, or of some other antiseptic. If vomiting persisted, the stomach was irrigated in a similar manner. Drugs thought to be of value as intestinal antiseptics were given in cases where the presence of fermented food was suspected. A description of these procedures is given, although they do not pertain to methods of feeding, because their employment doubtless influenced the general result. It was found that so far as sterilization was concerned there was no difficulty in furnishing to infants a diluted milky fluid which was taken with comparative avidity. It was noticed also that acute enteritis subsided, and that few cases of sudden diarrhœa, or what is commonly known as "cholera infantum" occurred. In fact, no case occurred originally in the hospital during this time. It was soon observed, however, that although infants were exempt from symptoms of acute disease, yet that they remained ill-nourished, and many recovered from acute enteritis, for which they were brought to the hospital, only to succumb after two or three weeks from gradual starvation. Constipation, often severe, frequently followed the use of sterilized milk. Efforts were made in various ways to supply proper nourishment; milk was peptonized and pancreatized with the materials manufactured by Fairchild Brothers and Foster, and was then sterilized ; and a fairly successful formula was that which combined milk, water, dried granular extract of malt, and a small percentage of bicarbonate of sodium. The result of this combination was a "malted milk," resembling chocolate containing an excess of milk, which was quite palatable, and agreed with some of the infants. Animal broths, white of egg, flour-ball, various preparations of malt, barley water, alcohol, several of the patented foods in market, and cod-liver oil were all used in turn with individual cases. Of these adjuvants, cod-liver oil was most beneficial, especially when accompanied by the administration of Fowler's solution in small doses. It was the invariable experience, however, that sterilized milk, whether peptonized or not, resulted in but a temporary improvement in the nutrition of the infants. Where an infant was breast-fed, and several daily meals of a sterilized mixture combining milk, cream, sugar of milk, and lime-water were given, the artificial

food seemed to be well borne, but when the sterile food was the only resource, the infant failed.

Every opportunity was taken to examine the bodies of children dying of starvation under the use of sterilized milk. A moderate degree of emaciation was present, the mucous membranes were anæmic, oftentimes slight serous effusions were observed, while the muscular tissues were pale and atrophied. The stomach was usually distended to a considerable degree, and its walls were excessively thinned. The intestinal tract showed no ulceration, nor was enteritis present. The mucous membrane was pale and excessively thin, and the condition of the entire digestive tract is best described as highly atrophic, with the distension resulting from paralysis. Upon examining the brain, passive congestion was observed, the congestion in the sinuses being found especially well marked in cases which had suffered from prolonged diarrhœa.

So far as the temperature of the atmosphere was concerned, sterilized milk seemed equally unsuccessful in winter and summer, and the conclusion reached has been that, as a food, the ordinary process of sterilization renders milk unfit for nourishment. In an ambulatory clinic at the Philadelphia Polyclinic, the writer furnished sterilized milk, prepared by trained nurses, to all infants whose mothers would use it. Many cases of acute diarrhœa, when visited by a nurse, and given sterilized milk, speedily recovered, but in no instance was its prolonged use more successful than in the cases already described. The practical difficulties accompanying the effort to place sterilized milk in the hands of ignorant mothers can best be appreciated by those who have made the experiment. Among the children of well-to-do parents, the familiar formula calling for milk, cream, and sugar of milk, to which, when sterilized, is added lime-water, serves a useful purpose in many cases, but for prolonged use other expedients have been found necessary. It has been interesting at various times to observe the change in the condition of children, wasting away upon sterilized milk, who have been taken to an entirely different atmosphere, and given fresh milk suitably diluted, and unchanged by sterilization; an immediate improvement in nutrition has been seen to follow such a change in many instances.

Regarding the changes in the stools of infants fed upon sterilized milk, the reaction and colour of the stools changed from alkaline to acid, and from yellow to green, apparently without distinct connection with the constitution of the milk. As intestinal irrigation was practised extensively, the composition of the stools was necessarily changed, and hence an

accurate observation of the stools in these cases while under treatment was hardly possible.

A considerable improvement in the mortality and morbidity rate followed the introduction of the methods of treatment described. The writer was at first inclined to attribute this improvement largely to sterilized milk, but further observation leads him to believe that the careful antiseptic precautions which were taken in the child's hygiene, together with the prompt removal of fermenting material from the digestive tract, had quite as much to do with the improvement of the patients as the sterilization of milk. The fact remains that "cholera infantum"—acute gastro-enteritis—did not arise in the wards, and was rapidly subdued in patients admitted from without. As a means of nourishment, however, sterilized milk was of very limited utility.

With reference to the recommendation of Professor Leeds that sterilization be performed at a lower temperature than that which I have previously employed, and for a shorter time, experiments are now in progress to test the practical value of this recommendation. It seems probable that many cases where milk is prepared by nurses and mothers who are not accurate as to the temperature employed, or the time expended in sterilization, owe the success of sterilized milk as a food to such a process as is recommended.

The good results often obtained by mixing good milk with an alkaline solution and sugar of milk, and then scalding or simmering the mixture, probably depend upon the same grounds. — *The American Journal of Medical Sciences, June*, 1891, *p.* 580.

7.—ON THE TREATMENT OF CHRONIC RHEUMATIC ARTHRITIS BY MASSAGE AND GALVANISM.

By A. Symms Eccles, M.B., London.

The treatment of chronic articular rheumatism by massage, galvanism, and exercises passive and active, has so far as I am aware, not yet been described, and it is from this therapeutical combination that I believe the best results are to be obtained.

Massage is best employed in severe cases, wherein there is much pain and thickening in and around the joint, with atrophy of muscles, and intrafascial tumefaction, for a few minutes several times daily; centripetal friction gradually increasing in firmness, and subsequently combined with kneading of the proximal muscles connected with the joint, being applied at first as far from the focus of mischief as possible, the lightest friction of the whole limb alone being

permissible at the beginning of treatment. Cautiously the firmness and near approach of manipulation to the joint may be increased, till the joint itself is, in the course of a few days, submitted to thorough manipulation of a somewhat complicated character; having for its object the dispersion and mechanical moving onwards of the accumulated waste products, the improvement of circulation, and the stimulation of lymphatic resorption.

At the same time and from the first the joint is subjected to the direct passage of a stabile galvanic current, by applying in as close proximity to the joint itself as possible on opposite sides of the articulation two electrodes of known dimensions through which are transmitted from ten to fifteen milliampères for ten or twenty minutes daily by voltaic alternation.

On the density of the current I believe the efficacy of the treatment by stabile constant current depends, and after repeated experiments and some considerable practice I believe the present form of electrodes in use to be the best for the different joints affected. One exception to the local stabile application of the constant current must be made, *i.e.* in the case of the finger joints. Here the size of the electrodes is necessarily much reduced if we apply them to opposing surfaces of the joint, so that in this case I have found better results follow the use of one electrode over the joint and the other in the palm of the hand, the same density being employed as in the larger articulations.

I have frequently, indeed always, observed not only in the application of the constant current to joints, but under all circumstances in which the percuticular mode is used, that massage of the parts over which the electrodes are to be placed, when practised directly before the employment of galvanism, reduces resistance to the passage of the current very considerably; in other words the number of cells necessary to afford the passage of ten milliampères through the circuit when any given electrodes are employed may be reduced at the outset of the application by as much as one-third, sometimes by more, if the part be well vascularised by massage previously. This has not, I believe been recorded, but perhaps it is so obvious a result of increasing the volume of fluid in the *cutis vera* and subjacent structures that writers on electricity have not thought it worthy of notice. Another point, and a striking proof of the efficacy of the treatment, is the gradually diminishing resistance opposed by the diseased joint to the passage of the current from time to time as the absorption and removal of waste and inflammatory products proceed.

In the earlier days of treatment, while as yet the patient cannot bear very vigorous manipulation, and while it would be

injudicious for other reasons to employ powerful and deep muscle-kneading, the labile application of the ascending current to the muscles of the limb is attended by diminution of pain and stiffness, due perhaps to the same causes as Heidenhain has shown to follow the application to a dead muscle, which is fatigued by faradism, and refreshed by galvanism.

The passive exercise of the joint is gently practised as early as possible, care being taken that too much suffering is not produced. One or two movements at each visit, the range of attempted motion being gradually increased, till at last the patient is told to aid, and independently to perform, the exercises most suitable to the particular condition of the joint, will slowly but surely overcome the tendency to muscular spasm, which is almost always produced by the initial movements; and finally after a period varying with the constitutional and local severity of the case, the resumption of power to use the limb, and move the joint without pain, will reward the prosecution of a somewhat laborions mode of treatment. This, in long-standing and severe cases, may tax the patience of both the sufferer and the physician; but will in the great majority of cases, result in recovery.—*The Practitioner, August*, 1891, *p.* 116.

8.—ON THE TREATMENT OF DIABETIC COMA.

By Ernest S. Reynolds, M.D., Physician to the Ancoats Hospital, Manchester.

In a very interesting paper in the *British Medical Journal* for March 8th, 1890, Dr. Dickinson calls attention afresh to the treatment of diabetic coma first used by Dr. Hilton Fagge. This is by the intravenous injection of a saline fluid like that used for cholera, containing chloride of sodium, chloride of potassium, sulphate of soda, phosphate of soda, and bicarbonate of soda. Dr. Dickinson's patient was a woman, in whom he first injected 106 ounces, after which she entirely recovered consciousness. Next day she again became comatose, when the injection was repeated with 350 ounces, consciousness again returning for nine hours. After thirty hours, however, she once more lapsed into coma and died. Thus altogether 22 pints of saline fluid were injected, with the excellent result that on two occasions consciousness was restored. This effect, in spite of the subsequent fatal issue, is of much promise for the future treatment of these hopeless cases, and of great value when only a temporary return to consciousness is necesary for legal purposes or bidding farewell to friends.

During the last twelve years I have seen about twenty cases of diabetic coma, all being rapidly fatal except the last two, which will be the subject of these remarks. On two or three occasions I have tried intravenous saline injections without any good result, but I have never injected the large amounts used by Dr. Dickinson.

A few days after his paper had appeared I was paying my usual evening visit to the wards of the Manchester Royal Infirmary, when I noticed a marked acetone-like odour in Bridgewater Ward. This I found to be proceeding from a diabetic male patient under the care of Dr. Leech, who has kindly allowed me to mention the case. On examining the patient I found all the usual signs of rapidly approaching coma. He was very drowsy, but could be aroused on speaking to him, soon lapsing, however, into his drowsy condition. His breathing was laboured, expiration being much prolonged ; he complained of feeling ill, much worse than usual, and had a pain in his left hypochondrium. His breath and urine were strongly acetone-like in odour, the latter giving a port wine colouration with perchloride of iron, a marked ring of albumen with nitric acid, and contained less sugar than usual.

I at once thought of again trying an intravenous saline injection, and prepared the apparatus. It occurred to me, however, that a simpler, but slower, plan of getting a large amount of saline fluid into the blood was by the stomach, and that this was quite feasible, as the patient could be roused. I therefore ordered him an aperient, and to drink during the night at least a gallon of fluid, together with an ounce every hour of a mixture containing 60 grains of citrate of potash to the ounce. As a result, the next morning he was slightly better, and the treatment was continued for another twelve hours, the citrate of potash being lessened in quantity. In three days all symptoms of coma had passed away, the sugar had again increased in quantity, the acetone (?) had disappeared from the breath and urine, and the albuminuria had entirely ceased. The patient was subsequently discharged, of course still suffering from diabetes.

As the treatment seemed to have been of some service it was worthy of further trial in cases of impending diabetic coma. The next case of this kind I met was a male patient under my care at the Manchester Union Infirmary, Crumpsall. He had been suffering for some time from diabetes mellitus, but had become seriously ill just before admission. I found the patient in a dangerous condition, complaining of having become rapidly worse. His breath and urine had a strong acetone-like odour ; there was marked albuminuria, slight drowsiness and breathlessness, but no characteristic "pain in the stomach." I ordered

him castor oil and to drink large quantities of fluid, and from 30 to 60 grains of citrate of potash every hour. During the next thirty-six hours he took one and a half gallons of fluid. In two days the acetone-like smell had disappeared, there was no port wine colouration on the addition of perchloride of iron to the urine, the feeling of intense illness had passed away, and within ten days not a trace of albuminuria was present. At the present time (two months after admission) he says he feels quite well, and though of course his diabetes still continues there have been no fresh symptoms of approaching coma.

Since treating these two cases I have again referred to Dr. Dickinson's paper, and find he had already suggested that in future impending diabetic coma should be treated by the method I have used.

What I especially wish to point out is this, that, as probably no case of recovery from diabetic coma is known, it behoves us to diagnose *impending* coma in its earliest stage, and so deal with it as to prevent unconsciousness coming on. The chief points to be noticed in this early stage are : A distinct sense and appearance of increased illness, often with loss of appetite, increased weakness, slight drowsiness, pain in the left hypochondrium, a laboured respiration, the expiration being especially prolonged, an acetone-like smell in the breath and urine, lessened excretion of sugar, so-called acetone reaction (port wine coloration with perchloride of iron) in the urine, and albuminuria. When these symptoms are present the patient is in the greatest danger. As I have said, I have only seen two out of twenty cases recover.

The treatment I wish to advocate is as follows : Absolute rest in bed, purgation (but not to an excessive degree), a slight relaxation of the diabetic diet, large doses of citrate of potash, and very large quantities of fluid taken internally. These fluids may consist of milk, lemonade, tea, water, or even barley water, a variety being necessary in order to induce the patient to take a sufficient total quantity, which should amount to nearly a gallon in twelve hours.

A slight pathological lesson can also be drawn from the two cases I have mentioned. It was once stated, I think by Ebstein, that diabetic coma was due to a necrotic change in the kidney (as indicated by the albuminuria), and as a result less urine was excreted, and some poison allied to acetone was retained in the blood, which, under ordinary circumstances, was constantly passed with the diabetic urine. The invariable fatal termination of these cases was also in favour of this theory. In my two cases, however, the albuminuria rapidly disappeared, and as we can hardly imagine that water and citrate of potash will cure necrotic changes in the kidney, this theory is probably quite untenable.—*Medical Chronicle, August*, 1891, *p.* 338.

9.—A METHOD OF ACCELERATING DESQUAMATION, AND THEREFORE OF SHORTENING THE INFECTIVE PERIOD OF SCARLET FEVER.

By W. Allan Jamieson, M.D., Extra Physician for Diseases of the Skin, Edinburgh Royal Infirmary.

Whatever influence the early throat symptoms may exert in communicating scarlet fever, it is universally admitted that the main danger of imparting the disease to others depends on the diffusion of the desquamating flakes which separate from the surface of the body during convalescence. Some years since I advocated that our efforts to limit the spread of scarlet fever should be directed to systematic disinfection of the skin, prior to, during, and till the absolute completion of desquamation. For this purpose mild measures of disinfection, repeated at frequent intervals throughout, are much more certain and satisfactory than stronger ones employed solely towards the close of the process of skinning, or just before permitting a return to free intercourse and association with all and sundry. Carbolic acid in the proportion of 3 per cent., in ointment or oil, constitutes the most reliable agent. With this, however, should be combined daily ablution with soap and warm water, so as to remove as rapidly and as completely as possible the dry epidermic particles as soon as these become loose, the carbolised oil or ointment being rubbed on the surface after it is dried. Further experience has convinced me more firmly of the truth of these principles. Such measures alone render isolation, where that can be carried out, effectual; even without isolation, when such cannot be obtained, they reduce to a minimum the risk of infecting others. While this method, therefore, affords the maximum of protection, it occurred to me that it might be possible safely to accelerate desquamation itself, so as to lessen the period during which infection is likely to take place. Various modes of attaining this end were tried in succession, and were rejected as unsatisfactory; but eventually a plan was discovered which is at once simple and effectual, and which so far has not been proved to have any disadvantages. The action of resorcin in causing the outer layers of the epidermis to separate without injury to the deeper ones is now well known, and has been made use of in the treatment of ichthyosis and of acne. Rubbed on as an ointment, it did not produce the desired effect in scarlet fever. A resorcin soap, indeed, would have amply fulfilled the indications, but on inquiry it was found that there were chemical difficulties in the way of manufacturing such. When resorcin was incorporated with ordinary hard or soft soap a molecular change took place in the drug, its con-

stituents broke up and formed new combinations; in fact, it was no longer a resorcin soap. But in process of time, by a simple procedure, Eichhoff succeeded in obtaining a stable resorcin soap. He found that when a soap was made chemically acid by the addition of salicylic acid, a moderate amount of resorcin quite sufficient for our purpose could be combined with it. A three per cent. resorcin salicylic superfatted soap is now prepared by Beiersdorf, of Hamburg, and by Muhlens, of Cologne. When this soap is used to wash cases of scarlet fever, warm water being always employed from the commencement to the close of desquamation, a notable diminution of the period occupied by "peeling" is observed.

From the consideration of a large number of unselected cases the conclusion has been arrived at that, while the commencement of desquamation may be as early as the fourth day of the disease, or may in exceptional instances be delayed as late even as the sixteenth, the average day on which it is first visible is the ninth. Again, I determined that from the onset of the disease till the completion of desquamation in sixty-two unselected cases the average was 55·5 days, no treatment having been employed to interfere with the natural process. But when washing with the resorcin salicylic soap was begun as soon as signs of desquamation could be noticed, or shortly before, the desquamation was entirely completed in 40·26 days. There is thus a gain on the average of more than a fortnight. In two cases washing with the soap was practised on only one side of the body, a commencement being made in one three, in the other four, days prior to the appearance of any trace of scaling. In the case in which the right side was washed peeling began on the right palm, and then subsequently on the right side of the trunk and limbs; in that in which the left side was so treated, the left palm, then the left side of the trunk and limbs, showed the earliest indications of desquamation. In all cases it was found advantageous, after washing with the soap and drying the body, to smear on a small quantity of some bland oil, such as olive, almond, or purified whale oil. The nurses, too, found it necessary to protect their hands with indiarubber gloves, or to use a sponge carefully in washing the patients, else their palms became tender from a thinning of the epidermis. Such of the patients also who were old enough, or far enough advanced in convalescence to wash themselves, noticed that the hand used in washing desquamated earlier than the other. The benefits to be gained from such a procedure are too obvious to need being more fully insisted on. One point only may be mentioned: that whereas on the average a patient in ordinary circumstances must remain a species of social pariah till the end of two months, when desquamation may be presumed to be

finished ; if washing with the resorcin salicylic soap be steadily carried out in the manner suggested, he may safely be dismissed from hospital, or permitted to associate with his friends at the termination of six weeks. It only remains to be added that all these observations were carried out under the supervision of Dr. Wood, the experienced medical superintendent of the City Hospital, with the assistance of Mr. Clark and Dr. Rubidge.—*The Lancet, September* 12, 1891, *p.* 604.

10.—ON EPIDEMIC INFLUENZA.

By J. Mitchell Bruce, M.D., F.R.C.P., Physician to Charing Cross Hospital.

The disease is epidemic in its distribution. The invasion is generally quite definite ; it may be sudden and swift, coming on in the street or without previous warning otherwise. Very shortly pains make their appearance, and they rapidly increase in severity. The pains of influenza are mainly of two kinds as far as the patient's complaints go : first, headache ; and second, pains about the limbs and trunk. The headache is characteristic from its severity, seat, and persistence. It is, indeed, no ordinary headache, and I cannot help thinking that it is even more severe in the present epidemic than it was last year. So violent and so persistent is it, that patients will tell you that they have not been able to sleep for two whole days and nights, in spite of all the different remedies which had been used to relieve it. It is in one or both of the frontal regions, and the eyeballs also ache (one or both), sometimes intensely. The pains in the limbs are also characterised by their severity, by their breakbone character, and in some cases by that distressing inability to keep the aching limbs at rest in bed, which we all know by experience after a day's over-exertion. By this time the patient is, or ought to be, in bed, and when we visit him we find, besides these symptoms, all the ordinary phenomena of fever. He is obviously ill, though not urgently so, and, in addition to the pains, complains of a sense of extreme poorliness or prostration. The pulse counts 92–120, and is large and soft. The temperature has risen to 102°, 103°, or even 104°. The skin is dry, but will presently become profusely moist. There is a white or whitish-brown coat on the tongue, with anorexia, thirst, considerable nausea, perhaps vomiting and looseness of the bowels or constipation, and the urine is scanty, high-coloured, perhaps retained. Various eruptions may appear on the skin—erythema, sudamina, miliaria,—which, if they happen to be associated with sore-throat, as is sometimes the case, may suggest the diagnosis of scarlet fever. Heaviness, apathy, and

somnolence, associated with the sense of chilliness and prostration, are frequently observed, out of proportion to the severity of the pyrexia. The patient complains not so much of debility as of a sense of coldness ; he lies on a couch in a state of helplessness and apathy, from which he cannot be roused. But I would repeat that in the present epidemic, as far as my experience goes, the pains in many instances overshadow by their severity most of the other symptoms of the uncomplicated disease.

Prominent also amongst the symptoms of influenza in many of our present cases are disturbances of the respiratory system. Cough is very common, of a very remarkable kind, being sudden, paroxysmal, violent, irrepressible, and harsh, attended with soreness in the chest, and ending in expectoration, with exhaustion. The sputa vary in quantity with the degree of involvement of the respiratory tissues. They may be absent or they may be profuse, yellow or grey, and muco-purulent when the catarrh of nose or lower passages is severe. Here let me warn you not to commit the mistake of expecting to meet with coryza in every case of influenza. Many persons will not acknowledge influenza because the nose has never run. They say there is always a cold in the head in influenza. This is an excellent instance of the growth of a popular error. When a nasal catarrh is severe it is accompanied by fever and pains in the head and limbs, and is then said to be a "feverish" or an "influenzal cold." "Influenzal cold" is easily corrupted into "influenza" ; influenza itself has probably been never seen ; and thus coryza has come to be put down as the essential feature or element of the epidemic disease, instead of the fever, the prostration, and the pains. I have dwelt on this point, insignificant though it may appear, in order to caution you against committing an error in diagnosis. Coryza, however, occasionally does make its appearance, especially in cases where rest and warmth have been neglected. If a man despise his attack of influenza, and walk about for two or three days, he is not only extremely likely to get a certain amount of "cold in the head," but he may be thankful if he does not have bronchitis or pneumonia set up as a consequence of his rashness. These are the most important features of an ordinary attack of influenza. The time at our disposal does not permit me even to mention many interesting varieties of the disease, which you will find fully described in special treatises.

The course pursued by uncomplicated influenza is measured by a few days. For the first two days the pains, fever, and sense of illness and prostration are severe. By the third day the worst is over : the temperature is much lower, perhaps normal, rising a little in the evening ; the skin is sweating profusely ; the pains are mostly subdued, and already the

appetite is returning. In four or five days the patient is apyrexic. A sense of more or less debility remains for a time — possibly for weeks or months. In other instances the course is modified. First, variability may be the most striking feature, the patient almost suddenly feeling very ill and much better alternately. Or the duration may be greater, the temperature continuing high for a week on end, and the pains persisting or returning. Such cases are peculiarly disturbing to the practitioner, as they suggest some obscure complication, but happily they may mean nothing more serious than a relapse, or, more properly, a recrudescence of the primary disease.

And now let me dwell for a moment on one or two of the special symptoms of influenza, and on its diagnosis. The most striking features of the complaint are the violent headache and pains in the limbs, the pyrexia, the remarkable sense of prostration, the degree of debility which accompanies it, and may follow it, and the tendency to serious complications. Of the pains I have already said enough for our present purpose. I must refer, however, at more length to the feeling of prostration, which is so generally complained of, so prominent, and out of proportion to the degree of the fever. A few days ago I saw two cases in which the patients were convinced that death was imminent ; the subjective "lowness" was so extreme, they said, that existence could not possibly continue, and yet in neither case was there actual danger, though both of them were sharply ill. Accompanying this symptom there is no doubt in many cases actual debility, objectively expressed by the state of the pulse, by a tendency to giddiness or faintness when the patient is raised for examination, or at particular hours of the night, and by extreme muscular weakness ; and after the acute stage has passed, and convalescence set in, there may be left for a considerable time neuralgia, faintness on movement, liability to "colds," unfitness or incapacity for work, and generally "poor health."

The *type of temperature* is somewhat difficult to describe, because its duration is so brief. Within forty-eight to seventy-two hours the temperature has risen far above the normal, and very likely returned to it.

The *diagnosis* of influenza is not difficult, yet it must very often be confounded with other diseases. First, at the beginning of an epidemic many cases are called by other names ; and, secondly, when the epidemic is established, and the practitioner overwhelmed with work, he sees nothing else in his patients—all the cases of rheumatism, bronchitis, and incipient phthisis which he meets with are for the time called "influenza." The aches of influenza suggest rheumatism, but they are more severe than the premonitory or general pains of

acute rheumatism, and too widely distributed and apart from the articulations to be confounded with that disease after the pains have "settled" in definite joints. It is well to know, however, that the salicyl compounds appear to relieve both; that the two diseases have this further peculiarity in common, that they attack more readily their previous victims; and that true rheumatism may follow close upon influenza, as in an instance lately under my own observation. In tropical and subtropical countries influenza has also to be diagnosed from dengue.

To sum up the treatment. Send the patients to bed, provide a good nurse, warmth, and rest, and feed them freely. See that the diet is fluid and of a highly nutritious and stimulating kind, including a definite allowance of wine or brandy. For the first few hours order ten or fifteen grain doses of the salicylate of sodium; and as soon as the pain is gone, drop that and put the patient upon free doses of quinine or cinchona.—*The Lancet*, *May* 30, 1891, *p.* 1191.

11.—ON ALBUMINURIA AND NEPHRITIS IN SCARLET FEVER.

By F. Foord Caiger, M.D., Medical Superintendent of the South-Western Fever Hospital.

In 1,008 cases of scarlet fever admitted during the year 1890, *albuminuria* was recorded in 30 cases. This small number does not pretend to include all cases in which faint and transient traces were present at one time or another. Those showing a faint cloud during the pyrexial stage of the attack, and those cases in which a faint haze with picric acid was observed for not more than three consecutive days are not included in the list. Such cases, for the most part, showing no signs of renal products on careful microscopical examination, and no tendency to recurrence before leaving the hospital, I believe to be of no pathological significance. Whether they will afterwards become the subject of renal disease is of course impossible to determine; but the fact that in almost every instance they were not sent home until the urine had been for several weeks entirely free from albumen is in itself ground for the hope that such will not be the case. In a large proportion of cases these faint and passing clouds were found on further investigation to have been due to the presence of mucin. Another source of error lies in the fact that the urines, unless albuminuria had been detected, were only examined twice a week, and in very young children it was only possible to collect a specimen but rarely. However, despite these sources of error, it was hardly possible for a case of albuminuria of marked degree to have escaped detection; and the record, without

pretence to accuracy, is, I think, of practical value. The fact, therefore, remains that the incidence of albuminuria on these cases, even allowing a wide magin for fallacy, was but small. This is in marked contrast to the results noted by Dr. Astley Gresswell on 375 cases of scarlet fever treated in this hospital in the months of October, 1887, to January, 1888. In his able and exhaustive monograph, entitled "A Contribution to the Natural History of Scarlet Fever," Dr. Gresswell states that he found albumen in the urines of 93 per cent. of his cases, and in the months of October and November in every one, the urines usually being tested every other day, and a neutral saturated solution of picric acid the reagent employed. Difference of season and epidemic type may, doubtless, in some degree, account for the discrepancy ; moreover, the individuality of the observer, and the nature of the test he employs, are not without their influence. The cases were treated in the same wards, and with practically the same environment. The only variation lay in the matter of treatment. The diet *scale* remained the same in the two series. Dr. Gresswell's ordinary cases appear to have been kept on " low diet," consisting of beef-tea, milk, and two eggs (in the case of children over ten years four eggs) for a period of three weeks, during which time no baths were given. In the cases under discussion in this paper, the patients were put on a meat or fish diet, with no eggs (in the case of children over ten one boiled egg), and were ordered baths on the day following that on which the temperature had reached the normal. This usually occurred about the end of the first week. Both series of patients were kept in bed for three weeks after admission. Their treatment, therefore, during the second and third weeks differed in this respect. Dr. Gresswell's cases were taking a diet rich in highly diffusible albumen without any baths ; my own, a much less proportion of easily diffused albumen and frequent baths ; and it was during the first three weeks that Dr. Gresswell found albumen in 100 per cent. of his October and November cases. If I am right in my conjecture that these are the two essential factors causing the disparity, it will be interesting to watch the result in cases once more placed under the former conditions.

With the exception of a slightly higher rate during the October and November cases, the albuminuria has been spread nearly uniformly over the year. Young children were affected in larger proportion than their elders ; 93 per cent. occurred in children under ten, the relative admissions for that age period being 75. Cold weather *per se* seems to have had no influence in producing albuminuria, but I have frequently noticed its apparent connection with dampness of the air, Days which might be described as "damp cold," or even "muggy,"

being marked by the coincidence of several fresh cases, which, if the albumen were only present in slight degree, rapidly cleared on the appearance of bright weather. Observations made during the years 1887 to 1889 on the urines of over 5,000 cases of scarlet fever during convalescence frequently showed an association between the appearance of albuminuria and a high degree of atmospheric humidity, often coupled with a low barometer. Bright, frosty weather is frequently characterised by a marked absence of albuminuria. Mr. R. D. Sweeting has recently adduced evidence pointing to the fact that the frequency of albuminuria in scarlatinal patients is directly related to the aggregation of acute cases in hospital wards.

Nephritis supervened in 26 cases. Though nearly equally distributed throughout the year, they were relatively slightly more frequent during the summer months. Twenty-three of these cases occurred within the first three weeks of illness. As before stated, patients were allowed to get up on the twenty-second day ; so that in only three instances did the affection develop after getting up. One case showed a relapse of the kidney affection. Dropsy was not a prominent symptom, and showed itself in the form of surface œdema, mainly in the face and legs. All cases presented hæmaturia in greater or less degree. Convulsions occurred in two instances, one of which was fatal. All cases, with this exception, recovered, the urine being free from albumen for several weeks before discharge from the hospital. The incidence of nephritis was, therefore, very small—viz., 2·7 per cent. This is in marked contrast with the statement which appears in the article on "Scarlet Fever" in Roberts' Theory and Practice of Medicine, 1890—viz., that the most frequent and important complication, and the one that requires special notice, is acute nephritis and its consequences. For my own part, I have ever been struck with the relative infrequence of acute nephritis in scarlet fever patients, if treated under favourable conditions ; 85 per cent. of these cases occurred in children under ten years of age, the percentage admissions for which age period being 75.—*The Lancet, June* 13, 1891, *p.* 1304.

12.—ON THE CARBO-HYDRATE ELEMENT IN DIABETIC DIET.

By A. E. Wright, M.D., late Grocers' Research Scholar.

[The following interesting observations occur in the course of Dr. Wright's lectures on some points connected with the Pathology and Treatment of Diabetes.]

If I might venture to express an opinion on so intricate a subject, it would be that the ideal diet would be a diet of

proteids and fats, to which the innocuous lævo-rotatory carbo-hydrates had been added in such quantities as were available, or, in default of these, the "assimilable quantum" of dextro-rotatory carbo-hydrates, at least whenever the bad results of a proteid diet were manifesting themselves.

I may, perhaps, remark in passing that the importance of the fats in the diabetic dietary does not seem to have been emphasised sufficiently in this country.

It will follow from what has been said about the sugars that we may divide them clinically into three classes: (1) the innocuous sugars; (2) the hurtful or relatively unassimilable sugars; (3) the mixed sugars. Such sugars as galactose, which have as yet been insufficiently studied from a clinical standpoint, must at present be referred to a kind of indeterminate limbo.

Of the entirely assimilable class of sugars, we have only two: levulose, which, as far as is at present known, does not occur by itself in Nature, and which we may, therefore, dismiss from our consideration; and inulin. Inulin is a homologue of starch, with the important difference that, instead of yielding dextro-rotatory simple sugars, as starch does, it yields only lævo-rotatory simple sugars. It occurs abundantly in dahlia tubers, in dandelion, chicory, and other roots, and, as Külz pointed out years ago, it can be baked into a good bread. Against it there is chiefly its price, some 15s. per pound; but, as Külz again suggested, there is no reason why it should not be produced at a comparatively moderate price. When the fact becomes widely known that there would be a large demand for it if it were cheaper, the first step will have been taken towards its being produced for the market. At present, I am sorry to say, an innocuous—that is, entirely assimilable—sugar for dietetic purposes remains as yet an unrealised desideratum.*

Not being able, therefore, to give the best thing in the way of carbo-hydrates to our patients, we have in certain cases to inquire what is the next to best. This I spoke of above as the "assimilable quantum" of dextro-rotatory carbo-hydrate. If we are dealing with a diabetic who is excreting no sugar on a diet from which all carbo-hydrates have been excluded, we might find his urine to be still quite free from sugar after we had allowed him, in addition to his previous diet, 25 grammes of dextrose, or its equivalent in whatever carbo-hydrate he might prefer. In such a case, 25 grammes would be within the patient's assimilation quantum, which might turn out to be, say,

* We may, however, possibly have an approach to such a food stuff in the Jerusalem artichoke, the carbo-hydrates of which, according to Tollens, are levulin and inulin during the spring and summer, while dextro-rotatory carbo-hydrates make their appearance, in the tubers only, in the autumn. Now, as artichokes are stated (*Mrs. Beeton's Cookery Book*) to come into season in June, it is possible that during a few months of the year Jerusalem artichokes may contain only assimilable carbo-hydrates.

30 or 40 grammes. In a case like this, if the morbid products referable to proteid metabolism were at all inclined to dominate the situation, I would urge that the patient should be allowed, as a substitute for some part of his proteid food, a certain amount of carbo-hydrate, provided that the quantity allowed was well within the patient's assimilation quantum. This limitation is to be observed where at all practicable, because when the patient is allowed carbo-hydrate to an amount at all approaching his assimilation quantum, it is found that that assimilation quantum has a tendency to diminish.

I have hitherto used the term "assimilation quantum" as if every diabetic had an appreciable quantity of dextrose he could assimilate without secreting sugar. This obviously cannot be the case in the severe form of diabetes, in which the patient continues to excrete sugar even although he may be taking none. But, on the other hand, there is reason to believe that no diabetic patient, even of the severe form, excretes all the sugar he takes in in his food. He is, in fact, almost exactly in the same position with regard to sugar excretion that the diabetic of the lighter form is when he has been given sugar in excess of his assimilation quantum. Let us suppose, to take the facts of an actual case, that we had given a diabetic patient, whose assimilation quantum we had found to lie somewhere above 25 grammes of dextrose, 50 grammes of that sugar, and then found his urine to contain 6 grammes of sugar. If we now proceeded to give him 100 grammes, his dextrose excretion would not be increased by another 50 grammes, but only by another 3 grammes. It would amount to only 9 grammes in all. Evidently, therefore, when we have overstepped the limits of the assimilation quantum, we have to deal with a ratio between assimilation and excretion. We may call this ratio the assimilation ratio, and we have to deal with an assimilation ratio both in the case of the slight form of diabetes, where sugar in excess of the assimilation powers is taken in in the food, and also in case of the severe form of diabetes, where the urine is never free from sugar even in the strictest diet. In the patient referred to above the assimilation ratio for 50 grammes may be represented by $\frac{44}{50}$, and for 100 grammes as $\frac{91}{100}$. The ratios in this particular case are, as will be seen, very favourable ones.

With reference now to the question of giving carbo-hydrates in the severe form of diabetes, I think something may be ventured in that direction as long as the assimilation ratio is moderately high, and as long as what I have called the morbid products of proteid metabolism are urgently requiring attention.

I would desire, however, not to be misunderstood on this point. It is only when there is urgency of this kind that an

increase of sugar in the urine should be permitted. In other cases it is only a weak pity that would allow a diabetic unnecessary carbo-hydrate.

We have no knowledge of what I have, from the clinical standpoint, called a mixed sugar in the chemical class of the non-crystallisable polysaccharids. They either fall entirely within the class of assimilable or of hurtful sugars. When, however, we come to the group of the disaccharids we meet with two examples of mixed sugars, cane sugar and milk sugar. The third of our disaccharids, maltose, of course falls entirely into the class of the hurtful sugars. Cane sugar, on the other hand, is composed of an innocuous and a hurtful sugar. From this chemical constitution, therefore, an important practical point results, namely, that two parts by weight of cane or invert sugar contain less unassimilable sugar than one part by weight of starch. This means that we may allow fruit in diabetes a great deal more readily than we may allow bread, and it shows that in the selection of vegetables for the diabetic patient we should choose such as contain as much of their carbo-hydrates as possible in the form of cane sugar. With regard specially to such fruits as grapes, the sugar of which is almost entirely invert sugar, it is wonderful how little harm results to diabetic patients from eating great quantities of them.

Milk sugar consists of equal parts by weight of dextrose and galactose. If galactose is an assimilable sugar, a point which has not yet been certainly made out, milk sugar would also fall into the category of the mixed sugars. There are considerable difficulties in the way of ascertaining whether galactose is assimilated or not. To begin with : there is the difficulty of getting it pure in large quantities ; and then more especially there is the difficulty of ascertaining how much of it is actually absorbed as such, seeing that it breaks down very readily into lactic acid. This source of error, which affects the determination of sugar assimilation in the case of every one of the carbo-hydrates, makes itself particularly felt in the case of galactose and of milk sugar. Hence the results that Külz has obtained in his study of milk sugar vary extraordinarily. Sometimes milk sugar appeared to produce very little sugar in the urine, sometimes it produced a great deal.

It is therefore plain that the question about the assimilability of galactose cannot be settled without a large number of observations. In dogs, according to Hoffmeister's observations, milk sugar appears to be the least assimilable of all sugars. The general result of the observations made in man is this : the addition of milk sugar to a diabetic diet in almost all cases seriously increases the amount of sugar in the urine. This is obviously what its chemical constitution would lead us to

expect, seeing that it contains 50 per cent. of dextrose. Whether it is more or less assimilable than cane sugar must remain for the future to determine.

The indications, in the occurrence of which it may be desirable to allow sugar in diabetes, are the appearance in large quantities in the urine of the morbid products of proteid metabolism. Among such products are acetone, aceto-acetic acid, and oxybutyric acid. With regard to the conditions of excretion of each one of these bodies, a certain number of facts have been collected—facts that raise a very strong presumption that these bodies have their source in the proteid metabolism of the body. I was anxious in the case of acetone, which is, perhaps, the only one of these bodies which can as yet be accurately quantitatively estimated, to convert the presumption of origin into more of a certainty, and so I undertook, while in Australia, a series of estimations of the daily excretion of nitrogen, acetone, and sugar in a diabetic case which I had under my care. It was found that the acetone does not vary either directly with, or inversely as, the sugar excretion. I think also that the results afford good grounds for believing that it varies directly with the nitrogen excretion.

We may, therefore, take the acetone excretion as an indication, though it may not be a perfectly accurate measure of the irregular proteid metabolism, which we have good grounds for bringing into connection with diabetic coma. When, therefore, the acetone and the oxybutyric acid increase in quantity in the urine, it is high time to do something to restrain it by introducing an alteration in the diet. I have not yet sufficient observations to be able to state whether an increase of fat in the diet has a salutary influence in such cases. I have an impression, however, from the cases that I have watched, that it has such an influence, and I hope soon to be in a position to make a positive statement on the point. In the meantime, I think we are at least bound to decrease the amount of nitrogenous food in such a case, and, having decreased it, we are equally constrained to find a substitute. We can find such a substitute only in increasing the amount of carbo-hydrates, unless we find it possible still further to increase the fat in the diet.—*The British Medical Journal, April* 11, 1891, *p.* 787.

13.—ON THE CHARACTERS OF AUSTRALIAN RICKETS.

By Philip E. Muskett, Late Surgeon to the Sydney Hospital.

It is somewhat unfortunate that the mere mention of the word rickets should immediately recall a vivid picture of the *severe* type of the disease in which the whole attention is

concentrated on the bony twists and curves. Moreover, of all the diseases of children, it is peculiarly the one which may be readily recognised by means of plates, for here again a direct appeal is made to the eye, and thus it is that the changes in the natural contour of the body at once produce a lasting impression on the memory. But as it is well known, rickets is a malady in which the nutrition of the *whole* body is affected, and the bone changes are only part of the same general process. And—as Cheadle points out, rickets means a good deal more than these alterations in the osseous system, for it includes, in addition, that imperfect nutrition of brain and muscle and nerve—which is so far more extensive, as a lesion, than the mere bone changes. The undue prominence assigned to the osseous mutations having been thus somewhat toned down, and the more complete processes involved in rachitis having been brought into a proper light, we shall be the better enabled to rightly appreciate the value of the early symptoms which belong to the life-history of rickets in general, and of Australian rickets in particular, and to fasten our attention upon the different periods at which they manifest themselves and the order in which they appear.

To begin with, then, who are the particular infants in whom we should expect to find rickets, whether in the old world or in the new? On this point there is an undivided opinion that it is almost exclusively confined to hand-fed infants who are being wrongly reared. In addition to such hand-fed infants, however, it may also appear in certain nurslings, and, lastly, it not unfrequently develops in children, after weaning, especially when there is the same perpetuation of food faults as in the case of hand-fed infants. An infant brought up on an excess of starchy foods, or little else, besides the inferior milk which is the *bane* of all large cities, will almost for a certainty develop rickets. But although it is chiefly amongst the hand-fed children that the symptoms of rickets are discoverable, yet it is not entirely unknown in those reared on the breast, particularly if the mother be in indifferent health and her milk poor and watery. Furthermore, as mentioned above, it may develop after weaning, especially if there be an attempt made to feed the child on a diet which is not strictly in accordance with the requirements of the rapidly growing frame. And besides these instances, which are directly concerned with the diet, we must be the more prepared to discover rickets when there are any associated conditions, such as insanitary surroundings, overcrowding, a neglect of the laws of health, &c., though even here it will almost certainly be found that the food errors, or insufficiencies are the primary developing causes.

As a rule rickets rarely appears before the age of six months; indeed its most selective period is that important time which

begins at the eighth month and lasts till the eighteenth. It may appear first after the eighteenth month, although this cannot be said to be frequent. In nearly all cases certain symptoms referable to disturbance of the digestive system precede the actual development of the malady. This is no more than might be expected from a disease which is essentially a disorder of interference with nutrition, and the nutritive process in a rapidly growing infant, a being which *lives so quickly*, so to speak, is one which badly brooks interference. But although there is actually an impairment of the digestive powers, it never sets up much more than a flatulent colic with abdominal pains, or those somewhat characteristic copious, pasty-looking, frequent and offensive stools. In few cases, indeed, is the digestive disorder severe enough to bring on an acute gastric catarrh, with its incessant vomiting, its feverishness and its general disturbance of the system. About this time, too, a condition of distinct anæmia is perceptible, and a general softness of the flesh will also be discovered to exist.

If the disease continues to advance, without let or hindrance, definite symptoms peculiar to the malady now make their appearance. On inquiry from the mother it will be ascertained that there is profuse sweating about the head and neck ; this is usually markedly increased during sleep, when it may be so excessive as to moisten the pillow. Even during the waking hours, however, these parts are unduly moist, while at the same time, strangely enough, the abdomen and lower limbs may be perfectly dry. Another most notable symptom, also often observed at this time, is the desire which the infant has to throw all his bedclothes aside, and accordingly he will often be found lying in his little bedgown, with the sheets kicked away.

One of the most important points which now claims our attention is a significant backwardness in the appearance of the teeth, and it is deservedly a matter to which great weight is attached in aiding us to a recognition of the disease. Eustace Smith writes that "if the tenth month passes away without the appearance of a tooth, suspicions of the disease should always be excited." In some of the cases which I have observed up to the present time no tooth had shown itself before the fourteenth, the fifteenth, and in two instances not a single tooth was visible before the sixteenth month. As an aid in making inquiries with regard to the progress of teething, the following passage from Dr. Vivian Poore's *Lectures on the Examination of the Mouth and Throat* will be found exceedingly useful. He writes: "it may be some help to the memory to call attention to the fact that when a child is twelve months old there should be twelve teeth in the mouth." Speaking for myself, I can only

say that I instinctively refer to this mnemonic help times without number, and I can only hope it will be as useful to others.

At about the age of nine months the healthy infant usually begins to creep and crawl, and about this time, also, he generally commences to "feel his feet," that is to say, if held to the floor he presses the soles of his feet to the ground. A healthy infant, too, should begin to stand up by holding on to something by about the twelfth month, and shortly afterwards he usually makes his first effort to walk. But it will be found that many of these rachitic infants have not made this progress, and in several instances I have observed a noteworthy delay in crawling, in standing, and consequently in walking.

A further symptom quite as significant as these, to which attention has already been directed, is that enlargement of the wrists which in English rickets is rightly regarded as a sign of much importance in the manifestation of the rachitic process. This is an epiphysial lesion due to hypertrophy of the cartilage (at the junction of the radial shaft and epiphysis), for, as Goodhart points out, rickets is pre-eminently a cartilage former —while syphilis is an energetic producer of new, though oftentimes bad, bone. In one or two of my cases, indeed, this swelling of the wrists has been so defined as to actually attract the notice of the mother, inducing her to ask for an explanation of its appearance. It may be, however, that a series of more extended observations will result in its being more frequently noticed, and thus allot to it its true sign-value in the recognition of Australian rickets.

In addition to all these preceding symptoms, even when the disease is first noticeable, it will be found that there is an especial liability to catarrh of the whole mucous membrane; hence bronchitis, gastric catarrh and diarrhœa are most frequent. This peculiar susceptibility to catarrh is a striking feature of the rachitic process, and hence it is that pulmonary, gastric and intestinal disorders are so often met with in this disease.

Another marked characteristic of rickets is the undue instability of the nervous system. There is a constant tendency to laryngismus stridulus (the *internal convulsions* of the nurses), to tetany and to general convulsions. Indeed, according to Angel Money, rickets is the neurosis maker *par excellence.* There is also an abnormal irritability of the nervous centres which may manifest itself by peevishness and fretfulness, and it will be remembered that reference has already been made to Professor Lewis Smith's remark that peevishness and fretfulness are frequently ascribed to other causes when all the time they may be proof positive of the existence of rickets itself.— *The Australian Medical Gazette, July*, 1891, *p.* 289.

DISEASES OF THE NERVOUS SYSTEM.

14.—ON THE DIAGNOSIS OF INTRA-CRANIAL HEMORRHAGE AND ACUTE SOFTENING.

By Charles L. Dana, M.D., Physician to the Bellevue Hospital, New York.

The present paper is based on a study of seventy-four cases of fatal cerebral apoplexy, embolism, and thrombosis, occurring for the most part in Bellevue Hospital. The list embraces all the cases that could be found on the record books in the last twenty years. These amounted to less than fifty. The remainder occurred in my own service, or in private practice.

Of the 74 cases there were of intra-cranial hemorrhage, 50 ; Acute softening : Embolism 12, thrombosis 12—24 ; total, 74.

Intra-cranial hemorrhages.—Of these there were of Meningeal : Pachymeningeal 7, pial and cortical 7—14 ; Central : Ventricular 23, corpus striatum and vicinity 7, optic thalamus 1, corpora quadrigemina 1—32 ; pons 1, cerebellum 3 ; total, 50.

Acute Softenings—Embolism.—The arteries involved were the right middle cerebral 4, left middle cerebral 4, right anterior cerebral 1, right posterior cerebral 1, right anterior and middle cerebral 1, right posterior and middle cerebral 1 ; total, 12. Right side, 8 ; left side, 4.

Thrombosis.—The arteries affected were the right middle 3, right anterior 2, left middle 3, left posterior 2, basilar 1, both middle cerebrals 1 ; total, 12. Right side, 5 ; left side, 5 ; both sides, 2.

Average duration of life in ventricular hemorrhages, 1 to 3 days ; in other central hemorrhages, 1 week ; in surface hemorrhages, 1 week ; in acute softening, 1 to 10 weeks.

Mortality.—When a hemorrhage breaks into the ventricles death occurs in from one to three days. In small primary ventricular hemorrhages life may be prolonged three weeks. The average duration of life in a fatal central hemorrhage is under a week ; hence, if a patient passes the first week he is likely to live longer. It is also inferred that if a hemorrhage breaks into a ventricle it does so within the first twelve, or, at most, the first forty-eight, hours after the vessel breaks.

In central hemorrhages the usual mode of death is by rupture into the ventricles. Out of 32 central hemorrhages 26 were ventricular. In surface dural hemorrhages life is prolonged somewhat, the average duration being four to five days, and the limits one to eight. In fatal acute softenings death may come in a few days, but is usually postponed, sometimes for several weeks. The extreme limit is 2·5 months.

Age.—Age is a factor in diagnosis. Hemorrhage is said to occur oftenest between the ages of sixty-one and seventy, and to steadily increase after the age of forty and up to the age of seventy. Thrombosis from syphilitic disease is said to be most frequent between thirty and forty, and rarely occurs from this disease after fifty (Gowers). Thrombosis from other causes occurs much later in life.

Embolic softening is admitted to occur oftenest in early adult life.

Miscellaneous Symptoms.—*Delirium* occurs both in hemorrhage and softening, if life is prolonged more than four or five days.

Consciousness is affected less profoundly and for a shorter time in softening.

Brief Severe Attacks of Loss of Consciousness with some hemiplegia indicate obstruction. Preliminary mild seizures also indicate obstruction. Consciousness is less permanently and severely affected in cortical and meningeal hemorrhages than in central, unless the former are very extensive. It is most severely affected in ventricular hemorrhages. If in a stroke a patient passes rather rapidly from partial or complete consciousness into unconsciousness, it means a ventricular hemorrhage. If he passes into convulsions, it means that the clot has broken through the cortex to the surface of the brain. If the stroke comes without loss of consciousness at first, but this supervenes later, immediately afterward, it is more likely embolic.

Convulsions.—These were never present as initial symptoms in any case. Convulsions almost invariably indicate a hemorrhage, and that this hemorrhage is dural or pial, or that a central hemorrhage has broken through the cortex. Dural or pial hemorrhage may cause no convulsion, however (3 cases). In one case only did a ventricular hemorrhage cause convulsions. Acute softening, if cortical, may cause convulsions ; if central, never. Vomiting never occurred in any case.

Rigidity.—Early rigidity occurs in about half the cases of ventricular hemorrhage, and is more marked on the paralysed side. It may occur in other hemorrhages, and with quite as much frequency in surface hemorrhages as in ventricular. It occurs, however, much oftener in ventricular than in other forms of central hemorrhages. It occurs but rarely in thrombosis (3 cases), and still more rarely in embolism (1 case).

Pupils.—In hemorrhage the most common condition is contraction and irregularity, with imperfect response to light. As death approaches contraction gives place to dilatation. The contraction is not due to any uræmic complication, as it occurs with equal frequency in patients with healthy kidneys, and

dilatation may occur in persons with very much diseased kidneys. Disturbance of the pupils is less marked in lesions of the frontal lobes. Irregularity of pupils is more frequent in lesions of the cortex end meninges, less frequent in ventricular hemorrhages. The dilatation is oftenest on the side of the lesion, owing probably to pressure on the third nerve.

In acute softening contraction almost always occurs, dilatation very rarely, except perhaps just before death. Irregularities are less frequent than in hemorrhage.

Alternate Conjugate Deviation.—When the patient has convulsive seizures, during which the eyes turn first to one side (usually that of the lesion) and then to the other side, it indicates a surface or cortex lesion. Otherwise, conjugate deviation has no particular diagnostic value.

Sensation.—Some loss of cutaneous sensation occurred in a fifth of the cases of hemorrhage, and in a very much larger percentage of cases of softening. If with moderate hemiplegia there is anæsthesia of the affected side, the probabilities are much more in favour of acute softening. For blocking up the middle cerebrals does not cause anæsthesia, while blocking of the posterior, or even anterior, cerebrals does often do this. I consider the presence of anæsthesia in connection with other symptoms an important point in diagnosis.

The Temperature.—The temperature in cerebral hemorrhage, according to Bourneville, usually falls several degrees below normal during the first few hours after the attack. It then gradually rises to normal or slightly above. In the first three or four days this rise may amount to 101° or 102° F. If the injured brain begins to heal the fever rapidly disappears, and the temperature falls to normal. If, however, the injured brain tissue tends to further soften and to inflame, the temperature rises steadily and death occurs.

The temperature is slightly higher (by $\frac{1}{2}$° to 2° F.) on the paralysed side ; or it may be normal on the paralysed side and subnormal on the sound side.

Contrary to Bourneville's experience, the temperature was not recorded as subnormal in a single one of my cases. Still in most of them the cases were at least a day old before observations were begun.

In acute softening from thrombosis or embolism the initial fall of temperature is rare, and in the rectum is short in duration. It often affects only the sound side, and on this side may continue low for two days.

In the majority of cases of acute softening, the general bodily temperature at first is not affected. Later it may be either

equal on the two sides, or slightly higher on the paralysed side. Just before death it may drop very low (94° F.).

The peculiarities of the temperature in acute softening, as distinguished from those in hemorrhage, are the rarity of primary subnormal temperature, and its presence, if it does exist, only on the non-paralysed side; also the slighter tendency to inequality of the temperature on the two sides, and its slower rise if a rise occurs.

It has been suggested by Bastian that the real temperature disturbance is that on the non-paralysed side, *i.e.*, on the side of the lesion, and that the temperature nerves do not cross. The profound unilateral temperature depression in some cases gives some colour to this view; but, on the other hand, experimental physiology very decidedly negatives it.

Temperature disturbances occur most markedly in lesions of the caudate nucleus, to a less extent in meningeal hemorrhages, and still less in lenticular or thalamic lesions. Lesions in the crus and pons disturb it most of all.

Urine and Kidneys.—The urine, contrary to the usual statements, was generally of high specific gravity (1.020—1.026—1.030) in hemorrhage and thrombosis. Renal disease was present in a third of the cases of hemorrhage, rather oftener relatively in thrombosis, and less often relatively in embolism. Albumin may be found in the urine, and yet no serious renal disease be present.

Chances.—Take a person between thirty and fifty, exclude heart disease, and the chances of his stroke being apoplexy are 19 to 3, or about 6 to 1.

Summary.—The stigmata of cerebral hemorrhage might be stated as follows: Age, thirty to fifty, sudden onset with coma and paralysis together, not paralysis preceding coma; initial and early rigidity; profound paralysis; very unequal pupils; a peculiar alternating conjugate deviation; convulsions, if present. Disturbances of temperature as described. The negative symptoms, so to speak, are absence of cardiac disease, or of weak heart, or extreme age.

Between embolism and thrombosis the diagnosis must be based on lines already laid down in text-books. My records show nothing especially new. I have, however, never seen so much temperature disturbance in embolism as in thrombosis. Furthermore, it should be said that the onset of embolism may be accompanied with sudden profound disturbance of conscious and peculiar convulsive movement, of a co-ordinate kind, not like the epileptiform convulsions of cortical hemorrhage.—*Medical Record, July* 25, 1891, *p.* 91.

15.—ON THE TREATMENT OF SYPHILIS, ESPECIALLY OF THE NERVOUS SYSTEM, BY THE SUBCUTANEOUS INJECTION OF PERCHLORIDE OF MERCURY

By W. Hale White, M.D., Physician to Guy's Hospital.

It is often so important to bring a patient rapidly under the influence of mercury, especially if he is suffering from syphilis of the nervous system—for irreparable damage may quickly be done to it,—that I thought the result of the use of several hundred subcutaneous injections of perchloride of mercury might be advantageously placed on record. Calomel baths and mercurial inunctions are rapid in their effect, but subcutaneous injection is much less trouble, an exact dose can be much more easily attained, and the patient is affected even more quickly, that, unless there are strong disadvantages, it seems, *a priori*, to be the best method of giving mercury for syphilis. It is of course impossible absolutely to prove this, because cases of syphilis differ greatly in their response to remedies. It has always been urged against this manner of giving mercury that it produces hard painful swellings which are liable to suppurate, and for this reason the method is rarely used; but by giving the injections in the way about to be described I have always succeeded in avoiding these complications. I am indebted to Dr. MacCall Anderson's "Specific Nervous Diseases" for it.

The part selected for the injection is preferably the gluteal region, and if the patient is liable to bedsores, rather to its outer and upper part, for then he will not lie on the spot at which the injection has been made. If this region should be, from sores or any other reason, unavailable, or if many injections have been made into both gluteal regions, the outer and front part of the thighs and the biceps of the arm are suitable places. The needle of the injection syringe is plunged deeply into the muscles, and an eighth of a grain of hydrochlorate of morphine is injected. The syringe is then detached from the needle, which is left in the muscles, and an eighth of a grain of perchloride of mercury is injected through the needle. The solution of perchloride of mercury is made by dissolving the salt in distilled water. The strength of the solution used may conveniently be a grain to the fluid drachm; then eight minims contain fully an eighth of a grain. I have repeatedly asked the patients if they object to this method of treatment, and none of them have done so. They say the injection is not very painful, and they do not mind the slight

induration which occasionally results, and which passes off in a few days. Generally there is no induration, but if there should be, the site of injection must be shifted. I have always given one injection every evening, and have desisted for a few days whenever the patient has shown any signs of salivation. At first, before and after giving the injection, I used to apply a piece of ice to diminish the sensibility of the part as recommended by Dr. MacCall Anderson ; but I soon gave this up, as I found it unnecessary. My house-physicians—Messrs. J. P. Pendlebury, J. M. Gill, M.B., and J. Fawcett, M.B.—have always given the injections themselves. The following are the cases in which during the past nine months I have used this method. They, I think, abundantly prove that the patient can be rapidly and safely mercurialised by this means, and that it often quickly relieves syphilitic manifestations.

Case 1. Syphilitic affection of skin.—James D——, aged twenty-eight, was admitted on August 7th, 1890, for a typical syphilide, having in some parts the appearance of a late secondary, in others that of an early tertiary, eruption. Injections were given on August 10th, 11th, and 12th, but were discontinued on the 13th and 14th on account of diarrhœa. The rash began to disappear on August 12th. On August 15th the injections were resumed, and continued daily, with the exception altogether of four or five days, till September 16th, when the patient was discharged cured. The impression derived from the case was that the rash cleared up remarkably quick.

Case 2. Secondary syphilis.—Mary A. V——, admitted Dec. 16th, 1890, for syphilitic headache, vaginal condylomata, a sore-throat, and a secondary papular syphilide all over the chest and abdomen. After three injections of the perchloride of mercury the pains in the head and throat were much better, and the rash was comparatively faint. After seven injections the rash could scarcely be seen, and the throat was quite well : the headache and condylomata were much better. On January 5th, 1891, the patient was discharged cured. Occasionally the injections were omitted, as she was easily salivated.

Case 3. Cerebral syphilis.— Frederick M——, admitted on June 21st, 1890. He had had syphilis. On June 12th, 19th, and 23rd he had attacks of convulsions on the right side of his body, each followed by unconsciousness. On admission he was found to be hemiplegic on the right side. He had injections of perchloride of mercury daily for a month, and took iodide of potassium internally. He soon regained considerable power in the hand, and when last heard of, six months after, he had had no more fits.

Case 4. Cerebral syphilis.— Margaret H——, admitted Feb. 16th, 1891. She had had syphilis. For some time past she had

been gradually getting deaf. Four months ago the deafness rapidly increased, she became giddy, and began to suffer from severe headaches ; in a month she was absolutely deaf. On admission, in addition to these symptoms, she had ptosis of the left eyelid and paresis of the left internal rectus, and a syphilitic eruption. Feb. 18th : Daily injections of perchloride commenced.—24th : Syphilide almost gone ; headache better.—28th : Ptosis and headache less ; injections omitted for four days on account of salivation.—March 12th : Ptosis and headache have disappeared. She can hear people walking about the ward.—March 22nd : Left the hospital. All her symptoms have disappeared except the deafness, and that is much better.

Case 5. Syphilitic myelitis.—Alfred C——, aged twenty-six, admitted Oct. 8th, 1890. Contracted syphilis in 1884. A fortnight before admission he was attacked with paraplegia, pain in the back, a feeling of coldness down the legs, and loss of control over the bladder. This attack was accompanied by rigors and fever. On admission the chief symptoms were paraplegia and anæsthesia of the lower extremities with incontinence of urine, which was alkaline. The temperature was usually about 101° F. He was given five grains of iodide of potassium thrice daily, and the bladder was washed out with an antiseptic solution.—Oct. 17th : The temperature having fallen, daily injections of one-eighth of a grain of perchloride of mercury were begun. Sensation in the legs soon returned. He gradually gained power in them. Exaggerated knee-jerks and ankle clonus developed. Some of the lost reflexes returned. Six weeks after admission the urine became acid. Between Oct. 27th and Dec. 24th the injection had to be omitted twice, once for four days, and once for seven days, because he became slightly salivated. He had nearly all his injections in the biceps of the arm, because the injudicious application of hot-water bottles before his admission had led to a large sore on each buttock. The injection into the biceps was more painful than into the gluteal muscles ; it was found that after some fifteen or twenty daily injections into one biceps it became stiff and contracted with flexion of the elbow, but this passed off in a few days if the perchloride was injected into the other arm.—Feb. 11th, 1891 : Patient has had the injections daily into the thighs since the last note without any bad results. He is in every way better.—April 18th : Except when they have been occasionally omitted for a few days at a time, either because he was slightly salivated or because he had a shivering fit (he has had ague) the injections have been continued daily. He has regained considerable power in his legs. The urine is acid and the sores have nearly healed.—May 1st : Injections discontinued as an acute bedsore has appeared.

Case 6. Syphilitic myelitis and peripheral neuritis.—John M——, who had been in the hospital before for syphilitic paraplegia, was readmitted in July, 1890, with complete paraplegia, trophic bedsores, cystitis, and glossy skin of the fingers. On July 4th a daily injection of perchloride of mercury was commenced ; he also had iodide of potassium. In spite of every treatment the bedsores and cystitis got worse, and he died on Sept. 19th, 1890.

Case 7. Cerebral syphilis.—Arthur M——, admitted March 3rd, 1891. He had had syphilis, and now suffered from headache, giddiness, transient attacks of blindness, and optic neuritis. During his stay of about three weeks in the hospital he had a daily injection of perchloride of mercury, and when he left his headache was much improved, and the giddiness and attacks of blindness had disappeared.

Case 8. Syphilitic peripheral neuritis.—Samuel R——, admitted Feb. 11th, 1891. He gave a history of syphilis. For the last three months paraplegia, accompanied by pain in the legs, has gradually come on. On admission he was completely paraplegic. He was ordered subcutaneous injections of perchloride of mercury. These were continued daily for ten weeks, except when they were discontinued for two or three days on account of slight salivation. He improved very much, and was able to walk about the ward with the help of a stick, and soon after left the hospital.

In the following two cases there was no history of syphilis, but the injections were given, partly because it was possible that some evidence of syphilis might have been overlooked, and partly because it is probable that mercury is beneficent for peripheral neuritis or myelitis, even when they are not syphilitic.

Case 9. Myelitis.—Elizabeth B——, admitted on Oct. 1st, 1890, for paralysis and anæsthesia of the lower extremities, together with cystitis and retention of urine. Injections of perchloride were begun soon after admission, and were given daily. The sensation in the lower limbs soon returned, and in November the urine was acid. In December she got up, and in February she was able to get about the ward with help. She continued the injections till April, when she left the hospital.

Case 10. Peripheral neuritis (?).—Thomas B——, admitted Jan. 19th, 1891, for slight paraplegia and diminution of sensibility in the lower extremities. He had perchloride of mercury injections daily till he left, on March 11th, much improved.—*The Lancet, June* 6, 1891, *p.* 1255.

16.—ON THE ADMINISTRATION OF BROMIDE OF POTASSIUM IN EPILEPSY.

By James Stewart, M.D., Professor of Pharmacology and Therapeutics in McGill University.

Ever since the treatment of epilepsy by the different bromides has become the general practice, it has become with most of us a mere matter of routine to give these drugs day after day and month after month, paying but little heed to the many other ways which, individually, are not of great moment, but when taken together are of the greatest possible importance. It will no doubt appear to many to be very heterodox to question the great utility of the bromide treatment. That it does good in many cases, that in some cases it is indispensable, I freely grant; but I as firmly believe that it does harm sometimes, and that it can be entirely dispensed with to the advantage of the patient in certain cases. I will first refer to the pharmacology of the drug. How does pot. bromide act in epilepsy? Some still maintain that it is through the blood-vessels, but there is no foundation whatever for that view. The experiments of Albertini have, I think, proved conclusively that it acts simply by depressing the motor activity of the cerebral cortex. Everything that we know of the action of the drug supports the experimental investigations referred to. Now there can be no question that an agent that depresses the reflex activity of the nerve centres cannot fulfil the first and most important indication in the treatment of epilepsy, *i.e.*, increasing the stability of the nerve centres. To neglect this indication is to neglect the first step in the proper treatment. Where the bromides are specially called for and operative are those frequently recurring attacks, say one or two weekly. Here we can with these agents break the habit—in other words, lessen the unconscious memory of the disease. The dose and mode of administration of the bromides is a matter of some importance. As to the quantity necessary, this, as is well known, varies greatly. As a rule, it is seldom advisable to order more than one drachm in the twenty-four hours: the smallest quantity sufficient to break the habit is the best. Formerly I followed the usual practice of giving the bromides after meals, but being influenced by the writings of Seguin, who strongly recommends that it be administered before meals in a weak alkaline water, I followed this practice for some time, but some recent experiences have taught me to rely on the usual method of administration after meals. The only gain in giving an agent on an empty stomach is that it enters the blood more rapidly. Now in these cases there is no necessity

for this rapid absorption, and, further, I feel satisfied that it is much more apt to disorder the functions of the stomach when given before meals.

Another important point is the frequency of administration. The object aimed at is to keep a sufficient quantity of the drug in the circulation at all times to keep up the depressant action on the nerve centres. If the fits recur only during the night or morning, one dose in the twenty-four hours of ʒss or ʒi is all that is necessary. If they come at irregular intervals in the day it is well to give the bromide twice in the twenty-four hours—after the evening meal and after breakfast. As the elimination is not very rapid, being seldom complete even within twenty-four hours, we may feel assured that two doses in the twenty-four are all-sufficient in any case. The elimination is, of course, more rapid during the day than during the night. It is never necessary to administer it three times in the twenty-four hours. If given too frequently we are certain soon to have bromism with its disagreeable consequences. We have a cumulative action; *i.e.*, more is taken up than can be eliminated. To prevent the disagreeable effects of a bromide on the skin, we have in arsenic a very efficient remedy.

As already mentioned, there is a class of cases of epilepsy better treated without bromides. It is that class where the fits recur at considerable intervals, say once every three or four months, or even less frequently. It has been well, and we believe truly, said by Broadbent: "The epileptic who enjoys a certain degree of immunity from attacks in virtue of large doses of bromide is on a lower platform than one who obtains such immunity by means which raise the tone of his nervous system, and the immunity may be purchased too dearly, not to speak of the disfigurement produced by the bromide rash, or of the derangement of digestion, or of the anæmia, which are common results. I have seen patients reduced to a condition scarcely distinguishable from general paralysis by the bromides, and all minor degrees of intellectual and nervous debasement, from which condition they have been rescued by discontinuing the drug and adopting a different treatment, the fits in several instances also ceasing. The legitimate use of bromides I conceive to be for the purpose of palliation, of staving off attacks which have become too frequent, and so of gaining time for a study of the peculiarities of the case, its true causation and ultimate pathology, and for the application of remedial measures which shall go to the root of the disease. When the fits are separated by months, I can see nothing but harm in giving bromides regularly. If, in such a case, an exciting cause can be identified, bromides can be usefully employed to parry its influence and avert the attack; but no such identification is possible if the

bromides are being taken constantly. Only by careful inquiry into the antecedent circumstances of each fit can this be done, and attention to the administration of the drug take the place of attention to other matters."—*Montreal Medical Journal, April*, 1891, *p.* 751.

17.—ON THE TREATMENT OF GASTRALGIA.

By Cecil Y. Biss, M.D., F.R.C.P., Assistant Physician to the Middlesex Hospital.

[The following excerpt is taken from an interesting paper entitled "The Diagnosis and Treatment of certain forms of Gastralgia."]

The first essential of successful treatment is, after having made sure of the diagnosis, to take the patient into our confidence, and to assure him that he is not a dyspeptic, and that his stomach and liver are not guilty of the dreadful physiological sins so frequently debited to their account. This effected, we may proceed to amend his habits of life wherever necessary, so as to ward off as far as possible the recurrence of his paroxysmal attacks. Of our measures, whether prophylactic or curative, there is none of greater importance than *warmth:* this is a prime necessity of these feeble folk. They—and this is, I believe, especially needful in the case of ladies—must be taught to dress warmly all the year round, though of course with variations proper to the seasons. Well-fitting underclothing of woollen material is of the greatest importance, and of all kinds none is so good as unbleached woollen stuffs, which, being elastic, fit closely to the parts covered. The feet generally tend to be cold, for most gastralgics have a weak circulation, and should diligently be kept warm with woollen socks, fur-lined or other warm boots, and a hot-water footstool used when sitting up or lying down. Night socks should be worn, and, if needful, a hot-water bottle or bag put into the bed. Woollen night clothing is of decided advantage. A useful article for these patients to keep at hand is a flat india-rubber water bottle. This can be used in bed, &c., for the feet, and is a most convenient means of applying warmth to the epigastrium as a means of relieving pain, and a very effective method it is too.

Next comes the question of *food and drink.* As far as alcohol is concerned, I think it is only beneficial if it improves appetite and relish, and then only in the form of a glass of claret or Burgundy, or a small quantity of sound spirit diluted with effervescing water. Beer and stout are, I believe, great evils to these sensitive stomachs, notwithstanding the ideas

unfortunately current that "nourishing stout" is so appropriate. As to food, it is not, in my opinion, wise to draw up a rigid dietary for gastralgics. They know pretty well, as a rule, what does not agree with them, and their own experience is the best guide. The ingenuity of the medical attendant should be taxed to the utmost to suggest suitable foods, and times and methods of administration. As a rule, it is best to keep the patient in bed for a few days when the attacks are at their worst. The quiet and warmth of bed conspire to assist the cure. Many kinds of foods, such, for example, as thin sandwiches made with hard-boiled eggs chopped up fine, or potted meat, can be taken in bed without pain, and in a day or two the attack may wear itself out, and the patient can return to the erect posture and more substantial diet with impunity. The very worst cases can be fed on milk and meat extract without pain, provided they remain in bed and are kept very warm.

As a rule, these gastralgics are restless beings, and very loth to accept the fact of their nerve-feebleness. The practises of early-rising and cold-bathing should be sternly discouraged. The mother of a family, if a gastralgic, should find a deputy for the breakfast table, take her own breakfast in bed quietly, and rise later on. The exertion of getting up and dressing before the meal, and bearing the burden of family and household cares, which so often bustle in and around that meal, would be most hurtful. Walking exercise needs strict regulation: it must never go the length of fatigue. Horse-riding must be forbidden. Evening social engagements are the most difficult matters to arrange, principally because these neurotic people are always best and brightest in the evening, and can accomplish wonders at that time, the tax for which, however, has to be paid at nature's counter next day with many pangs. The city man who will "put in his exercise" in the form of a walk home after his day's work is his own worst enemy.

Lastly, the subject of *drugs* has to be considered, and I have left them to the last, not because it is sought to disparage them, but because they can be most advantageously discussed last.

In the first place, I would suggest that it is wise to make sure in every case whether there is a complete absence of malarial taint. Some of the worst cases I have known have been those of persons who had suffered from ague; and it is well known how prone that disease is to linger about the system, causing neuralgic pains in all situations. If there is a history of this kind, arsenic is clearly the best drug to use. In recording my own experiences of this drug, however, I must add that, notwithstanding the high encomiums that it has received from certain writers, I have not found it of much value in the treatment of gastralgia. Here I may also add a list of

certain others from which something was expected, but have yielded discouraging results in my practise ; these are—belladonna, Indian hemp, bismuth, and the vegetable bitters. The first two have a very powerful influencce over nerve-centres, but I have not found it possible to lull gastralgia without pushing them so far that their other actions were disagreeably felt. The last two are, of course, most valuable in the treatment of true dyspepsias, but I have never been able to succeed in relieving gastralgia with them alone. The drugs I have found most useful are those which I now name, following the order of utility : opium, coca, strychnine, iron, quinine, cod liver oil.

When a paroxysmal attack of gastralgia comes on, it is not only desirable to stop the pain for the sake of giving relief, but it is the best practise to do so with a view to cure ; for if it is not stopped the stomach gets into a hyperæsthetic condition, and the attacks tend to recur. Promptly to stop the pain is, therefore, the leading indication of treatment. After many observations, I have come to the conclusion that cocaine, in doses of from one-sixth to half a grain, administered shortly before meals, is of great utility. The drug may also be given when the pain comes on, and sometimes, at least, appears to relieve it. But opium is the remedy *par excellence*, and must be freely used, if needed, to reduce the pain, which it never fails to do, all due precautions being taken to prevent the formation of the opium habit. I use a fluid preparation in order to secure the most rapid absorption of the drug. Nepenthe, or the Liquor opii sedativus, are those which I prefer. I do not think it is either necessary or advisable to administer it hypodermically, and a ten-minim dose is ordinarily sufficient. Bismuth, hydrocyanic acid, alkalis, and bitters may be used if gastric symptoms are super-added to the pain. A little alkali had better always be given along with the cocaine or opium above recommended ; it neutralises acid, and appears to afford relief.

Strychnine and quinine are valuable remedies for improving the tone of the nervous system generally, and I believe cod liver oil, where it can be borne, greatly assists in this. Iron is also a very useful remedy, and in the form of Pilula ferri carbonatis (B.P.) does not disturb the stomach, while it improves the blood and acts generally as a tonic ; the acid and strongly astringent preparations of iron are, however, to be avoided.

Finally, the constipation which generally exists must be relieved before any real good can be done. An occasional mercurial, followed by a saline draught next morning, is valuable, but saline medicines must be used seldom and with caution, for these feeble patients often find them very depressing. Safer laxatives are the confection of senna, or compound

liquorice powder, or an elixir of cascara sagrada. An occasional dose of castor oil, which may be administered without exciting distaste in the elegant form of the Mistura olei ricini, embraced in the recently published *Addendum* to the Pharmacopœia, is very advisable, especially when liquorice powder or other remedies containing insoluble elements are habitually taken.—*The Practitioner, July*, 1891, *p.* 38.

18.—ON THE TREATMENT OF GRAVES'S DISEASE.

By A. Maitland Ramsay, M.D., Surgeon to the Glasgow Eye Infirmary.

[Dr. Ramsay concludes an interesting and exhaustive article on exophthalmic goitre with the following remarks upon the treatment of the disorder:]

In a disease of which the pathology is so obscure, and the etiology so closely related to psychical and emotional disturbances, it is not surprising that in many instances the therapeutic results are disappointing. As a general rule, the more uncertain the action of medicinal agents in any given disease the greater is the number of remedies recommended; and so in exophthalmic goitre a mere catalogue of all the drugs, the employment of which has been advocated by some and condemned by others, would occupy a very considerable space. Of all drug treatment in this disease probably that from which the best results are most frequently obtained is the use of belladonna and its alkaloid atropine; but ergot, the bromides, and the iodides, in spite of all that has been written in their favour, rarely fail to give most disappointing results. In 1865 Benedikt first treated the disease by the application of electricity to the cervical sympathetic. He stated that while the current was passing the pulse became slower and that both the swelling of the thyroid and the protrusion of the eyeballs became markedly less. Treatment by electricity may be carried on in either of two ways. First, according to the method of Eulenburg and Guttman, who apply one electrode to the region of the sympathetic in the neck, and the other to the nape; or, second, according to the method of MM. Vigouroux and Charcot, who, in addition to applying the current to the neck, advise the application of the faradic current to the eyelids, the goitre, and the cardiac region. Hydropathic treatment is advised by the French physicians, and although this method would certainly not suit every case, yet in some instances it might prove a valuable aid to other forms of treatment.

In the therapeutic management of exophthalmic goitre every individual case will demand the most careful consideration, but

in all instances the first thing to be done is to remove the patient from the surroundings in which the disease has originated, so as to secure the greatest amount of physical and mental rest, with cheerful companions and in congenial surroundings. If the patient be very weak or nervous it will be necessary to advise absolute rest in bed for as long a time as is thought necessary, and to try, by means of nourishing, but not too stimulating, food, to promote nutrition. Only after this change of environment can any special form of treatment be expected to prove beneficial. In all cases it is well to give galvanism a trial, but in addition, belladonna in fairly large doses, with or without small doses of the tincture of digitalis, may be prescribed. If nervous excitability be very great, and sleeplessness a prominent symptom, narcotics are clearly indicated and ought not to be withheld. After improvement begins to set in, convalescence may be hastened by the administration of such tonics as quinine, strychnine, arsenic, or iron, as well as by change of air, especially to the seaside or to the mountains. In very many cases treatment conducted on lines similar to the above will be attended by good results, but in all cases the progress is necessarily slow, and the results are usually in proportion to the care and patience with which the treatment has been carried out.

In any case complications may arise which will demand special treatment, and in some extreme cases even surgical interference.—*Glasgow Medical Journal, September*, 1891, *p.* 196.

DISEASES OF THE ORGANS OF CIRCULATION.

19.—ON ANGINA PECTORIS AND CARDIAC PAIN.

By T. Lauder Brunton, M.D., F.R.S.

The factors in the pathology of angina pectoris seem to indicate that the pain is due in most cases to cardiac distension, caused by the resistance in front being too great for the ventricle completely to overcome; while at the same time relief by regurgitation is prevented. The increased resistance may be either absolute or comparative. It may either be greater than what would occur in a healthy person, or may simply be too great for a weakened heart; although probably in most cases the resistance is above the normal, and the cardiac power is below the normal. In all cases, however, there is a disturbance of the vascular nervous mechanism, which would tend, by either slowing the heart or dilating the vessels, to adjust the action of the one to that of the other, and thus to keep the blood-pressure

at the proper height, neither allowing it to fall too low nor to rise too high. The nervous mechanism in all probability may undergo central disturbance, and thus we may have attacks of angina pectoris of an epileptic or hysteric nature, and more especially we may get them caused by emotional disturbances. We may also have them from disease of the nervous paths in the spinal cord, as in the case of locomoter ataxia ; or of the cardiac nerves, as by tumours ; and in all probability we may have also reflex disturbance, caused by derangement of other organs. One case which I saw some years ago was probably an instance of one or other of the last named varieties, though it might be hard to say whether the pain was due to implication of nerves, or was reflex from a neighbouring part of the body. It was that of a man aged thirty-six, who complained of pain in the chest under the left nipple, shooting through to the back, and running down the left arm as far as the elbow. During the attacks his medical man found that the pulse was not quite regular, and that the face was pale. He had taken nitrite of amyl, but it seemed only to make him worse. On pressure over the sternum, opposite the second and third costal cartilages, I found that it was excessively tender, and was slightly swollen. I learned that he had suffered from syphilis twelve years before. I advised the use of iodide of potassium. In a short time after beginning the drug his pain left him and did not return. Here the anginal pain might be due to reflex irritation from a commencing node over the sternum, or might possibly be due to thickening, involving some of the cardiac nerves. The high arterial tension which occurs in cases of gout is a very powerful agent in bringing on the attacks. Not only does the arterial tension do this directly by the increased resistance it offers to the heart, but gout is frequently liable to render patients very irritable, and give rise to those emotional disturbances which are sometimes fraught with such fatal consequences. For both reasons, therefore, it is very advisable to cause free elimination, both from the bowels and from the kidney.

A form of elimination not much in vogue, but which is sometimes exceedingly useful, is bleeding ; and in the case where I first used nitrite of amyl, bleeding invariably prevented the recurrence of the pain for one night, when without it an attack would have been certain to occur. The natural indication for relieving the pain at the time is certainly to lower the blood-pressure, and this is most rapidly and efficiently done by the administration either of a nitrite or of some other substance which acts in the same way as a nitrite. Nitrite of amyl is the one which is the most commonly used, but according to the recent researches of Cash and Dunstan, the nitrites which act most powerfully are the following, the first being

the most energetic :—(1) secondary propyl ; (2) tertiary butyl ; (3) secondary butyl ; (4) isobutyl, nearly equal ; (5) tertiary amyl ; (6) α-amyl ; (7) β-amyl, nearly equal ; (8) methyl ; (9) butyl ; (10) ethyl ; (11) propyl.

Of these substances, the isobutyl has already been used with good effect. Along with Mr. Tait I investigated the physiological action of nitro-glycerin in 1876, and showed that it was the same in character as that of nitrite of amyl. On account of the headache which it caused Mr. Tait and myself, I hesitated to give it to patients ; but in the following year it was successfully introduced into medical practice by Dr. Murrell. Both nitro-glycerin and nitrite of sodium, recommended by Dr. Hay, have the advantage over nitrite of amyl that they can be more readily used to keep up a steady diminution in the blood-pressure, and the plan of giving small doses of nitro-glycerin at frequent intervals during the day is sometimes most advantageous. The best way of doing this is to break up a chocolate tabloid into many small pieces, which are put into a *bonbonniere*, and one of them taken every ten minutes or a quarter of an hour. In this way the action is never very great, but is kept up with a considerable amount of constancy during the whole day. Some experiments which Mr. Bokenham and I have made with hydroxylamine have shown it to have an action almost exactly like that of nitrite of amyl, and I intend shortly to try it in angina pectoris, where I expect it will probably have a beneficial action.

But while we may try to avoid sudden increase of tension from exercise, or from emotion, and to diminish the excessive tension in cases of gouty kidney by free elimination, and by an almost entirely vegetable diet, while we may lessen the tension during the attack by nitrites and allied remedies, we must think at the same time of the enlargement of the heart, and try to increase its force as best we can.

In conclusion, I ought to say a word about tobacco. In a healthy person it tends to cause great cardiac derangement ; in some it produces great irregularity of rhythm, and the patients complain of palpitation ; in others it causes sudden faintness, so that the patient drops down insensible as if he had been shot. The first kind of tobacco-heart I have seen is almost entirely in working men, who smoke a coarse tobacco ; the second form I have seen in those belonging to the upper classes, who have smoked fine tobaccos. Besides its effect upon the heart, tobacco has a most extraordinary power to contract the vessels, and perhaps there is no other drug that in a somewhat large dose can raise the blood-pressure so rapidly and so much as nicotine. It must not be concluded, however, from effect of these poisonous doses that smoking in great modera-

tion is certain to be injurious. Each individual case must be judged upon its own merits, and while moderate smoking may be allowed in some, it must be entirely forbidden to other patients suffering from angina pectoris. — *The Practitioner*, *October*, 1891, *p.* 257.

20.—ON CHEYNE-STOKES' RESPIRATION IN CARDIAC DISEASE.

By M. A. Boyd, M.D., Physician to the Mater Misericordiæ Hospital, Dublin.

[After an interesting narrative of a case of cardiac disease in which this form of respiration occurred and in which great relief followed the inhalation of oxygen, Dr. Boyd goes on to make the following, amongst other remarks:]

The phases of the respiratory phenomenon, as I observed them, were as follows:—

1st. An apnœal period characterised by deep sleep, lividity of face, quick pulse, feeble contractions of heart, perfect rest from all agitation mental and bodily.

2nd. An inspiratory period, with rousing of all the patient's faculties, extreme restlessness, slowing and strengthening of the pulse, apparently stronger contractions of the heart, less lividity of the face, and then a final deep inspiration.

3rd. An expiratory period, with inspirations gradually getting shorter and expirations longer, pulse getting quicker and heart feebler in its contractions till expirations cease and chest is empty, and restlessness gives place to sleep, which continues through apnœa following.

If we now examine for an explanation of this respiratory phenomenon—assuming it to be connected primarily with some defect in the heart, and excluding those cases of Cheyne-Stokes' respiration met with in cerebral disease or injury, where the functions of the respiratory centre are directly interfered with—it appears to me, looking at it from a cardiac point of view, the phenomenon is only an effort on the part of the higher automatic centres to rest a heart that is either too feeble to charge an arterial system the aorta of which may be dilated, or the vasomotor control of which may be defective, and whose own supply of blood may be rendered defective in consequence, and its nutrition enfeebled.

The phenomenon then comes to be explained on mere mechanical grounds.

During the apnœal period the left heart is resting, contracting on small quantities of blood, and acting in this condition feebly and quickly, such as we see in conditions when it is dilated and

feeble, as in cases of advanced valvular disease. At the same time the systemic veins are full from feeble *vis à tergo*, the brain and tissues filled with oxygenated blood from the previous forced expirations, and the lungs filling from the feeble right side with venous blood. This latter rouses the pneumogastric filaments, and forced inspirations begin, which forced inspirations bring oxygenated blood to the left side in large quantity, and the heart is roused to contract.

All physiologists are agreed the principal purpose of the forced inspiration is to powerfully draw the blood from the systemic veins to the right heart, and aerate what blood has accumulated in the lungs during the apnœal period, when the right heart was contracting feebly ; but it also has the effect of hurrying more blood into the left heart, and filling the left ventricle, the muscle of which begins to act more slowly, and to take a longer time to do so on its full contents. This apparent stronger contraction has not, however, the effect of filling the aorta sufficiently, as the sphygmograph showed that the arterial tension was low, though the up-stroke was higher. Then comes the significance of the forced expirations—a significance, as far as I can find in the literature of the subject, which has not heretofore been alluded to. They enable the feeble ventricles, with their already overcharged contents, to finally fill the lungs on one side and the aorta on the other, and to raise the tension in the arteries. In the apnœal period following, both ventricles are again resting until the stimulus of venous blood in the lungs rouses the pneumogastric and inhibits the respiratory centre. Landois, in his "Physiology," says :— "During the great and forced inspiratory efforts, the heart is powerfully dilated, the elastic traction of the lungs act so as to dilate the cavities of the heart in the direction of the lungs, more blood flows into the right heart and much less blood is driven out of the left heart ; hence this side of the heart is distended with blood, while the aortic system contains a small amount of blood. Then come the forced expiratory efforts, which have the effect of helping to empty the ventricles. The air in the lungs being under high pressure compresses the heart and fills the great vessels. No blood can pass into the thorax from without, hence the systemic veins are full, swell up, and become congested. Then comes the apnœal period, when the arterial system is full of oxygenated blood, and, the pneumogastric no longer stimulating the respiratory centre, breathing ceases."

That apnœa can be produced by surcharging the blood with oxygen, any of you can prove experimentally on yourselves by taking rapid and deep inspirations, when an apnœal pause will follow.

As far as my experience goes, the cardiac conditions necessary for the production of this form of breathing are not alone dilatation of the aorta, as Hayden has pointed out, but also dilatation of the right ventricle, with beginning degeneration or weakness of its walls, also hypertrophy of left ventricle with or without dilation, but with degeneration of its muscle or its dynamic contractile power enfeebled from any cause whereby it is unable to empty its contents into a dilated and inelastic aorta.

It may occur to many that this condition of the heart is frequently met with in many cases of valvular disease accompanied by atheroma of the arteries, and only produces dyspnœa. Why, then, should not Cheyne-Stokes' respiration occur in all such cases where these conditions exist?

The difference, in my mind, is only one of degree; and any attack of cardiac dyspnœa produced by such alterations in the heart and aorta may become Cheyne-Stokes' dyspnœa when any additional strain is put on it, so as to still further enfeeble its action and cause interference with the supply of arterialised blood to the respiratory centre. The affection is, in fact, cardiac dyspnœa plus poisoning, or starvation of the respiratory centre.

That poisoning or interference with the nutrition of the respiratory centre in the medulla is a necessary accompaniment of any alteration in the heart leading to Cheyne-Stokes' respiration, must now be considered proved; and that poisoning of this centre or interference with its blood supply by disease or injury may produce Cheyne-Stokes' respiration *per se* without any heart disease, the observations of von Dutch in 1867 go to prove, as he described cases of this form of respiration occurring in association with apoplexy, meningitis, and uræmic coma; and Broadbent confirms these assertions in 1877 by illustrative cases.

Now, all observers agree that the Cheyne-Stokes' respiraton may accompany cerebral disease, as well as coma depending on either uræmia or apoplexy, with or without cardiac engagement.

My experience of the good effects of the inhalation of oxygen in Cheyne-Stokes' respiration has convinced me that it not only keeps the respiratory centre in a condition of stable equilibrium, but it does so by supplying oxygenated blood to the heart itself, and thereby improves the nutrition and muscular contractions of that organ.

The rapid disappearance of the dropsy and dyspnœa in the typical case I have alluded to, as well as others treated similarly, would encourage me to suggest its employment in other cases of degeneration of the heart as a remedy worthy of trial.—*Dublin Medical Journal*, *July*, 1891, *p.* 13.

21.—ON THE DIAGNOSTIC VALUE OF THE PHYSICAL SIGN "TRACHEAL TUGGING" IN THORACIC ANEURISM.

By Richard Lea Macdonnell, M.D., Professor of Clinical Medicine, MacGill University, Montreal.

[*The notes of cases are not reproduced here.*]

In 1878 the following remarks, by Surgeon-Major W. S. Oliver, M.D., appeared in *The Lancet* :—

"As the diagnosis of thoracic aneurism of the aorta is often difficult and obscure, notwithstanding the various physical means we have now at our disposal for detecting it, I am desirous of mentioning a method of examination which has afforded me material assistance in diagnosing this disease (or even simple dilatation of the vessel) when it occurs, as is most generally the case, either in the ascending or first part of the transverse portion of the arch. The process is as follows :—Place the patient in the erect position, and direct him to close his mouth and elevate his chin to the fullest extent; then grasp the cricoid cartilage between the finger and thumb, and use gentle upward pressure on it, when, if dilatation or aneurism exist, the pulsation of the aorta will be distinctly felt transmitted through the trachea to the hand. The act of examination will increase laryngeal distress should this accompany the disease."

Since the publication of the above remarks this physical sign, which came to be known as "tracheal tugging," has been sought for in the medical wards of the Montreal General Hospital, and its great importance was early recognised by my teacher and predecessor in the chair of clinical medicine, Dr. George Ross. Tracheal tugging was always found to be a reliable sign of aneurism of the transverse arch, and in one case it was the only positive sign present of an aneurism whose existence was subsequently made evident by well-marked signs and symptoms of the disease. In all the cases of aneurism of the aorta published in journals or in society proceedings either by Dr. Ross or by myself, the presence or absence of tracheal tug was carefully noted. On several occasions, too, Dr. Ross has drawn attention to its value, notably in his article on Thoracic Aneurism in Wood's "Reference Handbook of the Medical Sciences":—

"Another physical sign of very great diagnostic importance, and which is also to be obtained by the educated sense of touch, is what is now known under the term 'tracheal tugging.' It is but quite lately that attention has been directed to this method of examination, and it is only now that its value has been realised. . . . If a deep-seated aneurism be present

which impinges at all upon the trachea or one of its principal divisions, then a very distinct and unmistakable *tugging downward* will be felt with each systole of the heart. When the heart is acting strongly, or when aortic incompetence is present, considerable rhythmical pulsation may be communicated to the fingers from the adjacent carotids, but with a little care this cannot be mistaken for the tugging directly downward above described. I have observed a number of cases of thoracic aneurism, cardiac, and other thoracic diseases, with reference to this sign, and I have never observed it produced by any other condition but aneurism."

The author of the article Thoracic Aneurism, in Pepper's "System of Medicine," refers to Dr. Oliver's directions as to the mode of examination for "tracheal tugging," but he does not mention his own opinion of its value. Beyond these two references I am unaware of there being any mention of this physical sign in any treatise on thoracic disease, British or foreign. Nor have I found that the sign was looked for in any hospital I have visited either in England or the United States, except in the medical wards of the Johns Hopkins Hospital, where Drs. Osler and Lafleur, old pupils of the Montreal General Hospital, have carried some of the results of their clinical teaching with them. In the discussion on the diagnosis and treatment of aneurism of the aorta at the Medical Society of London on December 9th, 1889, "tracheal tugging" was not mentioned—in fact, it appeared to be quite unknown. As to the mode of eliciting this physical sign, I have nothing to add to the directions given by Dr. Oliver. In some cases the movement of the box of the larynx is so distinct that the pulse can be counted simply by placing the tip of the forefinger upon the pomum Adami, and making a slight upward pressure.

With the object of forming a just estimate of the value of the tracheal tug, I have collected the histories of all the cases of thoracic aneurism recorded in the case-books of the Montreal General Hospital since 1878, omitting those in which the absence or presence of tugging was not definitely noted. This period embraces the service in the medical wards of Drs. Osler, Ross, Wilkins, Molson, and myself. Twenty-three such cases are upon our records, and to this series I have added the histories of two cases observed in private practice. These twenty-five cases appears to prove a series of statements regarding the significance of tracheal tugging as observed in the light of our clinical experience at the Montreal General Hospital.

1.—*Tracheal tugging is never present except in aneurism.*—Though I have repeatedly examined patients who were

suffering from other diseases, as well as those who were suspected of having aneurism, with a view to testing the truth of this statement, I have never found the tug perceptible. In a case of Hodgkin's disease, where there were enlarged glands in the thorax causing a pressure upon the trachea, which could plainly be seen with the laryngoscope, and in which there were other signs of pressure—dilated pupil, unilateral sweating of the face, unilateral epistaxis, and accelerated pulse-rate, all pointing to pressure upon the sympathetic in the root of the neck,—I could detect no tug.

2.—*When tracheal tugging is present the aneurism is so situated as to press from above downwards on the left bronchus, or upon that portion of the trachea immediately adjacent to it.*—To understand thoroughly the mechanism of tracheal tugging a careful study of the relations of the transverse aorta in a cross section of the frozen chest should be made. The plates of Braune or of Dwight are also very instructive. The length of the transverse arch is not great, and the direction of its course is almost directly backwards from the upper border of the second right costal cartilage to the upper part of the left side of the body of the fifth dorsal vertebra. The transverse aorta rides on top of the root of the left lung, lying between the left bronchus and the trachea. An enlargement of the blood-vessel, be it ever so small, will press upon the bronchus or upon the trachea at the root of the bronchus, and impart its pulsation to the air tube. At each beat it would push the bronchus down, and this downward push would necessarily be felt by the trachea and the larynx.

In seventeen out of twenty-five cases tracheal tugging was noted. What part of the aorta was involved in these seventeen cases, and on what part of the trachea did the aneurism press? A necropsy was obtained in eight of these cases. Seven were hospital patients, and one was a private patient. In six there was distinct pressure upon the left bronchus from above. The most convincing case is one of Dr. Molson's, in which the aneurism, after pressing upon the left bronchus, caused a fatal hæmoptysis by opening into it. In a case which I closely watched myself, the tumour as seen *in situ* distinctly pressed down upon the left bronchus. In another case there was no pressure at all on the trachea, but only upon the left bronchus.

3.—*Tracheal tugging may be present when many other physical signs and symptoms are absent.*

4.—*Tracheal tugging does not occur in aneurisms which do not involve the transverse arch.*—In eight cases tracheal tugging was never found. In but one was there evidence of disease of the transverse arch. Two necropsies were obtained, but in neither was there pressure upon the left bronchus.

5.—*Direct pressure on the trachea does not cause tracheal tugging.* —A clinical observation affords evidence upon this point. The patient was the subject of Hodgkin's disease. A large thoracic gland behind the sternum pressed upon the trachea so as to cause stridor of the breathing, and to give rise to danger from suffocation. The projection of the tumour into the lumen of the trachea could be distinctly seen with the laryngoscope. If aneurisms pressing directly against the trachea could produce tugging, then it would become an accompaniment of aneurism of the innominate, which we can readily understand when we consider the relations of that artery to the trachea. In all cases I have seen in which aneurism of the innominate could fairly be diagnosed tugging was absent. Tugging would therefore prove a valuable assistance in arriving at a decision as to the locality of an aneurism. Those affecting the innominate artery are sometimes treated surgically, but such measures as ligature would hardly be adopted in full knowledge of the fact that the arch was involved. Here is a case in point: a man entered hospital with symptoms of innominate aneurism. Ligature of the carotid and subclavian was advised by the members of the surgical staff. The patient declined to submit to any operation. A few months later he died suddenly. It was found after death that not only did the aneurism involve the innominate, but also the transverse arch. Tracheal tugging might here have pointed out the inutility of surgical interference.

A few more points require consideration. Tracheal tugging is a very early sign in the history of the case. In all the cases in which it was present it was detected on admission. I can find no history of its gradually appearing after admission. And as compared with laryngeal manifestations, it appears still more valuable, since the tug can be detected by anyone accustomed to practise physical examinations; while a reliable opinion as to paralysis of the cords can be given by a specialist or a person thoroughly skilled in the use of the laryngoscope. The two symptoms exist together in most instances. One case cited affords an explanation of how there may be laryngeal paralysis without tugging. Here the tumour was situated beyond the left bronchus and pressed in from behind instead of from above, thereby causing the weak breathing at the left base. The vagus was not subjected to pressure until the sac burst into the posterior mediastinum, pressed upon the nerve, and caused the adductor spasm which nearly proved fatal. In another case there was absent tugging and laryngeal paralysis; but here, as there was no post-mortem examination, it would be useless to guess at an explanation. In another case there was tugging and no laryngeal paralysis. Here, again, there was no necropsy. —*The Lancet*, *March* 7, 1891, *p.* 535, and *March* 21, 1891, *p.* 653.

22.—ON THE USE OF DIGITALIS IN THE SENILE HEART.

By G. W. Balfour, M.D.

The drugs useful in the senile heart in all its forms are but few in number, but of extreme value. We may easily multiply the number, but with the multiplication the value is not increased. All varieties of the senile heart are forms of failure with complications—the treatment must therefore be tonic, with modifications. Digitalis is the chief and most thoroughly reliable cardiac tonic ; where any drug can act at all it will never fail, and, carefully managed, there is no risk of any danger or discomfort in continuing it for as long as may be needful. Under the influence of digitalis the whole muscular system becomes more elastic, each muscle both extends and contracts more perfectly, and as the heart gets the benefit of all the blood in the body passing through it, the drug affects it earlier and more powerfully than the other muscles. The muscular coat of the arterioles gets also a proportionately larger share of what is going, and the effect of the more perfect contraction of both heart and arterioles is to raise the blood-pressure by improving the circulation, increasing the amount of blood in the arteries, and diminishing the stagnation in the veins. The result of this improvement of the circulation is to cause the absorption, from the interstices of the tissues, of the fluid which has been slowly accumulating there under the influence of venous remora. The absorption of this soakage, which has nowhere appeared as dropsy, increases the flow of urine, and proportionately diminishes the weight of the body, quite apart from any interference with its metabolism. Although digitalis improves the extension of a muscle as well as its contraction, it does so by improving its elasticity and restoring its tone,—hence, even though the diastole of a dilated heart may be prolonged, the ventricle is not filled any fuller, but rather less so, and this is specially well seen in cases of aortic regurgitation where, in spite of a prolonged diastole, the ventricle is found to diminish in size as its beat increases in force. If the dose of digitalis be moderate, this increase of tone, accompanied by an improvement in nutrition, due to a more effective flushing of the heart with a more perfect nutrient fluid, may be kept up and continued indefinitely for months or years without any fear of its action going farther. But if the dose of digitalis is in excess of what is required, the contraction of the heart goes on increasing till the symptoms of digitalis poisoning occur, the heart ultimately coming to a standstill in systole. It is the duty of the physician to see that the happy mean is not exceeded ; and there is the less temptation even to approach excess in treating the senile heart, that there is first of all certainly some risk of

rupturing arteries which may be atheromatous by the rise of blood-pressure due to the drug, though I believe this risk is most infinitesimal; and, secondly, because we can scarcely ever hope to contract and cure a dilated and hypertrophied senile heart. A young heart we can often contract, and so perfectly cure its dilatation; an old heart rarely, if ever. Even with a young heart, especially if with dilatation there is some hypertrophy, we sometimes fail, but this is of little consequence if the heart muscle be made and kept strong and healthy.

Of all the preparations of digitalis I prefer to employ the tincture or Nativelle's granules of digitaline in the treatment of the senile heart, and I prefer these preparations because from long experience I know exactly what they can do, and because I rarely fail to be able to hit the exact dose which is beneficial, and which can be continued indefinitely without fear of any danger from accumulation. Moreover, the tincture is more trustworthy in its action than the infusion, I used to fancy because its preparation was more uniform, the infusion running the chance of being sometimes made from leaves over a twelvemonth old, and therefore not reliable. But there is another reason for the occasional diversity of action between the tincture and the infusion, which is, that digitonin, a principle antagonistic to digitaline, the active principle of the drug, is readily soluble in water and only sparingly so in alcohol. Nativelle's digitaline granules are said to consist chiefly if not entirely of digitoxin, a principle having an action precisely similar to digitaline. Digitoxin is quite insoluble in water and only sparingly so in cold alcohol; it is, however, a very active and useful cardiac tonic when given by the mouth in the form of Nativelle's granules. The dose of digitalis is not absolute but relative, partly to the bulk (weight) of the individual, but specially to the amount of blood,—a weakly anæmic patient requiring and tolerating only a very much smaller dose than one more full blooded. In all forms of the senile heart digitalis is employed only as a tonic to strengthen and feed the heart, and for this ten minims of the tincture every twenty-four, or at the most every twelve hours is sufficient. If we employ Nativelle's granules, a most elegant and efficacious preparation, then one granule in the twenty-four hours is quite sufficient, rarely too much. Each of these granules contains a quarter of a milligramme (0·003858 of a grain) of what Nativelle calls crystallized digitaline (digitoxin), which is a very active drug, as a couple of months' treatment—60 granules, 0·22848, or a little more than one-fifth of a grain—will produce a very decided difference in the beat of most hearts. When one granule in the day is too much, I prefer to employ one granule in the forty-eight hours, and I myself have never found any heart to require a smaller dose. Nativelle, however,

has a syrup of digitaline, and by using it the dose may be subdivided as minutely as may be desired. I have seldom seen two granules in the day, one every twelve hours, tolerated for long except in large built and plethoric patients, and to give three in the twenty-four hours is almost certain to induce speedy intolerance of the drug, and as a rule violent sickness. The object of using digitalis in the senile heart is not to remove dropsy, to slow the pulse, or to contract the heart, but by the gradual accumulation of trifling advantages to tone up, strengthen, and improve the nutrition of the cardiac muscle. In this way the circulation is improved, œdema of the tissue interspaces removed, and then the blood-pressure is lowered, and considerable strain taken from the heart. For this purpose moderate doses only are required, doses which may be continued for months or years without any risk from accumulation, and which yet have a decided effect in strengthening the heart, improving the tone and elasticity of its muscle, and accumulating energy in its ganglia. Sometimes at the commencement of treatment, if the heart has been much neglected, the dilatation considerable, and the irregularity great, it is needful, or at all events advisable, to give larger doses of digitalis at first, so as to gain control over the rate and rhythm of the heart, but these large doses cannot be employed for any length of time, and should be pretermitted for at least a couple of days before putting the patient on the smaller doses for a continuance.

There is only one other member of the digitalis group which has any pretensions to rival digitalis itself, and that is strophanthus, but it is so much more uncertain in its action than the leading member of its group, that I have never felt inclined to displace our indigenous drug in its favour. Moreover, if, as some experimentalists say, its action is chiefly expended on the papillary muscles, while there is either no increase, or "only a very slight increase in the force of the contractions of the ventricular wall," it would seem from its action alone to be scarcely the drug to trust to in the class of cases I am now speaking of. There is no doubt, however, that strophanthus is a powerful heart poison, and it has more than once happened to me that the heart of a senile patient apparently moribund has been roused to action by the tincture of strophanthus when it appeared to be already beyond the reach of digitalis; and as strophantin is readily soluble in water, which neither digitalin nor digitoxin are, there is an obvious advantage in its hypodermic use in such cases. Strychnine is a most valuable remedy in the treatment of the senile heart; it being a most admirable gastric tonic, especially when venous congestion and a tendency to catarrh exist. Arsenic is also an excellent tonic and stomachic. —*Edinburgh Medical Journal, June*, 1891, *p.* 1090.

23.—ON THE DIETETICS OF THE SENILE HEART.

By G. W. Balfour, M.D.

Cases of senile heart may be grouped for dietetic purposes under two distinct heads: First, those who are over their normal weight, who are breathless with occasional irregularity of the heart, and with or without marked signs of cardiac dilatation; and, secondly, those who are at or below their normal weight, and who suffer very considerably from cardiac disturbances of various characters, also with or without very evident signs of dilatation of the heart. The first class of cases are usually dubbed cases of fatty heart, and are probably told to expect a sudden death; or if the view taken is not quite so serious, they are sent to Marienbad to be fined down. The second class are grouped under the ordinary heading of cardiac disease, and treated accordingly. I have already pointed out that a fatty heart is a comparative rarity, and that its diagnosis is perfectly impossible. Hearts set down as fatty are weak, dilated, or dilatable, and some of them are oppressed with fat though not themselves in any respect fattily degenerated. To send such cases to Marienbad is a practice not without danger, as the saturation of the vessels with the acidulous water often precipitates the cardiac dilatation it is our object to ward off. The danger of this treatment is now distinctly recognised, and is very distinctly warned against by some of the ablest of the modern German physicians. Fortunately it is not necessary; we can easily and comfortably relieve such patients of their dangerous and wearisome burden without taking them from their own firesides, if they will only be obedient and trustful; if they will not, by all means let them take the risks of Marienbad—if they choose.

The first point of importance in regard to all cases where dieting and dietary come into question is to divide the day properly, so that there may be a sufficient interval between each meal. In health the stomach empties itself usually three to four hours after a meal, and requires a rest before more food is ingested. In those having weak hearts and feeble circulations the digestion is bound to be somewhat slower, hence the first rule to lay down is: *not less than five hours between each meal.* This allows of three statutory meals of the day, with a sufficient interval for the digestion of the last meal to be pretty well advanced before retiring to rest, which tends to insure a quiet and restful night. The next matter of importance to remember is, that the ingestion of solid food into a stomach still digesting a former meal arrests that process and provokes flatulence, hence the second rule to be laid down is: *no solid food of any kind is to be taken between meals.* This rule must be absolute; not even a morsel of cake or biscuit, or any similar trifle, is to be ingested

between meals. There is nothing so destructive of gastric comfort as the continual pecking induced by gouty bulimia. This prohibition does not extend to water, which should be taken hot rather than cold ; and of this hot water half a pint may be sipped if desired about two or three hours after a meal. Taken in this way it does not disturb the digestion, it washes out the stomach, and passes speedily through the kidneys without raising the blood-pressure. But as little fluid as possible should be taken with meals.

The third important rule is, that *all invalids should have their most important meal in the middle of the day*, and should only have a light meal in the evening. All those with weak hearts have feeble digestions from the gastric juice being deficient in quantity and defective in quality ; it is needful, therefore, for their own comfort, to restrict the quantity of their food, and to see that it is not diluted with too much fluid. A model dietary for a patient with a weak, irregular heart would be : — Breakfast, 8.30, small slice of dry toast, weighing about an ounce and a half, with butter ; one egg, or half a haddock, or a similar quantity of any fresh white fish ; with a small cup of good coffee or of tea, not infused longer than four minutes, with cream and sugar if desired. The next meal is dinner at 1.30 or 2 p.m. This may consist of two courses—fish and meat, or meat and pudding, or fish and pudding, *never any soup.* Individual idiosyncrasies must be inquired into and attended to, but certain things must be absolutely forbidden—soups, pastry, pickles, and cheese being the most prominent of these. Fish of every kind may be taken, and also meat of every kind ; though at the commencement of the treatment the choice had better be restricted to white fish boiled in milk or grilled, sweetbreads, chicken, rabbit, game, or tripe, but ere long any variety of meat may be taken in moderation. For vegetable a single potato, if desired, may be freely allowed, if care be taken that it is thoroughly disintegrated by teeth or fork before being swallowed. Spinach is always a safe vegetable, as there is not a particle of flatulence in it, and its chlorophyll has the credit of acting as a cholagogue, probably it is slightly laxative. Tomatoes, onions, leeks, or celery, either stewed or raw, are safe enough. Green peas and beans must be used sparingly, if at all, but all other vegetables must be wholly shunned. While this list of safe vegetables is given, it is merely intended as an alternative list, the model allowance being the single potato or an alternative. The puddings must be restricted to stewed fruit or any form of milk pudding.

A single cup of tea, infused only four minutes, may be taken at five o'clock, or from four to five, if desired, or a tumblerful of hot water if preferred or the tea disagrees ; and if any

stimulation is thought needful a teaspoonful of Liebig's extract of beef may be stirred into the hot water, but not a morsel of biscuit or cake must be taken with it.

Between half-past six and half-past seven comes the final meal of the day, and this may be a bit of white fish and a potato, a bit of milk pudding, porridge and milk, or cold bread with hot milk poured over it. At bedtime a small tumblerful of hot water will soothe the stomach, promote sleep, and pave the way for a comfortable breakfast next morning.

On some such dietary as this, which is given merely as a sample to be modified according to idiosyncrasy, but which must be adhered to in its main lines, a weak digestion from a feeble heart will gradually recover its tone, and the patient will feel comfortable, instead of being puffy and oppressed after meals, with an irregular and tumbling heart. The patient should be weighed from week to week, and if the declension is too rapid the dietary must be altered or varied according to idiosyncrasy and circumstances. As a rule a patient who has been wasting gains flesh from improved digestion, while an obese patient gets thinner, and in most an equilibrium is established as soon as the average normal weight is reached. Care must always be exercised to prevent the loss of weight from being too rapid, and to arrest it by modifying the diet if the declension persists too long. A mixed diet is always best for the maintenance of health, and if animal fats are not much indulged in the carbo-hydrates in the diet indicated will not be found to be too much. Those accustomed to live fully require to exercise a considerable amount of self-denial to keep within due bounds, and nothing but self-denial will ever reduce obesity with comfort and perfect safety.—*Edinburgh Medical Journal, June*, 1891, *p.* 1083.

DISEASES OF THE ORGANS OF RESPIRATION.

24.—ON THE PROGNOSIS IN CROUPOUS PNEUMONIA.

By David Drummond, M.D., Physician to the Royal Infirmary, Newcastle-on-Tyne.

[After some general remarks upon the death-rate of acute pneumonia, and the general condition of the patient as factors to be borne in mind in making a prognosis, Dr. Drummond says :]

In venturing to offer an opinion as to the result in a case of pneumonia, it is most important to determine the day of the disease, as symptoms of little or no prognostic moment at one time prove to be of the greatest value at another. It is not

always an easy matter to say what day of disease the case has reached, for although the initial rigor will prove a useful guide in the majority of cases, it not unfrequently happens that there is no distinct rigor at all ; and again, in some instances, the rigor is postponed for a day or two after the beginning of the illness. It must be freely admitted that at times it is absolutely impossible to fix the commencement of the attack. So many cases are preceded by catarrhal complaints, particularly bronchitis, with a general feeling of illness, that we are often informed that the patient has been ill for eight or ten days when the pneumonia has probably just developed. We are, therefore, compelled, in the absence of a conclusive statement, to determine the day of the disease as accurately as possible by a careful consideration of all the main features of the case, attaching due weight to the history of a rigor. The occurrence of an antecedent or prodromal illness does not appear to influence the prognosis to any extent, except in so far as it serves to lower the patient's vigour. Nor is much importance to be attached to the period of incidence of the consolidation, though it is not without some significance. In the majority of cases the third day is reached before consolidation can be clearly demonstrated, whilst it is not unfrequently the fourth. In my experience dulness on percussion, with tubular breathing, is to be regarded as unfavourable when it occurs very early in the course of the disease. And it will be found occasionally that the cases in which the dulness is decidedly postponed run an unsatisfactory course ; these, however, are not reliable prognostic factors.

I am not satisfied that the situation of the consolidation is a guide of any practical value in prognosis. As is well known, some attach great importance to the apex lesion, in which case it is the custom to shake the head with ominous gravity. In my own practice, however, apex consolidations have not proved especially fatal. I refer, of course, to cases in which the upper portion of the lung is affected in the first instance, for I admit at once that extension of the disease upwards in basic pneumonia is a very serious event. We all watch the expectoration with interest, and it will, I think, be conceded that lessons of importance are often to be learnt from its nature. A total absence of expectoration is both rare and significant. It is rare, for as a rule in cases in which we are shown an empty spitcup or stainless handkerchief the patient has swallowed the expectoration. This he may do as the result of impaired vigour, or it may arise from inattention due to mental hebetude ; in either case it is important. But some patients appear to have no free secretion to expectorate, and they seldom do well. On the other hand, a large quantity of frothy bronchial secretion is to be regarded with suspicion ; for although some have strength

enough to carry them through, notwithstanding this and other obstacles to their recovery, many are so hampered by the incessant coughing, sleeplessness, cardiac difficulty, and increased respiratory effort, all of which are the usual accompaniments of copious secretion in pneumonia, that the balance is turned against them. The superabundant expectoration in these cases is shown by noisy râle and almost constant cough. The patient is pale and haggard, with increasing cyanosis, and is worn out for want of rest. My own observations have led me to favour in the main the view that the prognosis is unfavourable in cases in which the expectoration is of a dark prune-juice character ; but I have so frequently seen this indication falsified, that I am not disposed to rely upon it in the absence of other grave signs. A thin watery fluid, especially when it is heavily charged with blood-colouring matter and profuse, is a serious omen, indicating as it does an extensive œdema of the lung. The cases that run the most satisfactory course to convalescence are those with a moderate amount of arrowroot-like expectoration, stained a rusty, or yellowish-fawn, or orange-juice colour. It should always be recollected that a falling-off in the expectoration when the râles are on the increase, especially towards the sixth day, is most unfavourable.

Although not of so much importance as some other indications, the temperature is not to be despised in prognosing a case of pneumonia. A continued high temperature from the first (at or about 104°) is suspicious, and if it reach 105° on two consecutive days without any material decline it is highly dangerous. So also is a fall about the sixth or seventh day, if associated with an increased respiratory rate. Marked acceleration in the respiration is no doubt a symptom of danger, and in the adult the outlook is serious when a rate above 50 is maintained. But it is the pulse that furnishes us with the most reliable information, and were I restricted to one sign I would unhesitatingly select the indication afforded by the pulse in venturing on a prognosis. It yields no uncertain sound. By it we recognise the heart failure that is so much to be dreaded, and is so often the cause of death from the sixth to the eighth day. In considering the pulse it is most important to keep ourselves informed as accurately as possible as to the day of disease. For a good steady pulse of 100 or 110 may mean nothing on the third or fourth day, whereas on the seventh or eighth it seldom fails to indicate recovery. On the other hand, a rising pulse at this time is a warning not to be mistaken, while the same phenomenon on the third or fourth day may have no real significance. Few who have watched with anxiety the course of a severe attack of pneumonia—say, in a valued friend, when perhaps frequent observations are made—can have

overlooked the rise in the pulse-rate that almost invariably ushers in unfavourable symptoms about the sixth, seventh, or eighth day. This rise is essentially progressive, as shown by the addition of a few beats in the minute as hour succeeds hour. A pulse of 120 in the morning of the sixth day is 130 in the evening, or perhaps more, rising to 140 during the succeeding twelve hours, and as it rises becoming smaller, with the running character, or perhaps intermitting, or it may be full and bounding, though compressible. Whatever particular quality indicative of failure it may possess one is almost constant—viz., increasing rapidity. Now, as already remarked, this sign to be of prognostic value should be a feature of that particular period of the illness when the pneumonic consolidation is at or is approaching its height—usually from the sixth to the eighth day. And it should be observed that the unfavourable indication lies in the fact that the rate is constantly rising. I have repeatedly, for example, known of cases that made an excellent recovery with a rapid and very empty pulse, maintained at about 130 to 135 on the seventh day. The observation that the pulse is not rising is particularly valuable in cases marked by extending consolidation at the time of an expected crisis, for these not unfrequently do well, which is seldom the case when the pulse-rate rises rapidly *pari passu* with the pneumonic extension. A very rapid pulse from the beginning is disquieting, as the heart is apt to fail at the critical moment. The urine should be examined often for albumen, and due weight attached to its presence if in any quantity.

It is essential to watch closely the progress of the pulmonary lesion, as a constantly extending area of dulness after the sixth day is decidedly ominous. It is no doubt difficult in many cases to determine whether or not the disease is extending, partly owing to the medical attendant's dislike to making frequent examinations, and partly because the consolidation often sets in rapidly, for a little harsh breathing in the area subsequently affected may be the sole premonitory sign even a few hours before the exudation solidifies. Notwithstanding the difficulties, it will amply repay the practitioner to give special attention to this point. The later the period in the attack the extension takes place, the greater the importance to be attached to it. Thus, for example, an extension from the lower to the upper lobe on the eighth day is a prognostic sign of much greater moment than on the sixth. It is most important in weighing the significance of extension as a prognostic criterion to determine accurately the condition of the portion of lung primarily affected. If we find that the tubular breathing at the base has been replaced by a feeble respiratory sound accompanied by medium crackling râles, and that the dulness, though

still pronounced, is diminishing—in other words, that the process of repair has set in satisfactorily in the part of the lung first consolidated (say, on the seventh or eighth day), notwithstanding the extension of the lesion,—the prognosis is by no means so bad as when the consolidation is still active, as shown by a continuation of the tubular breathing and pectoriloquy.

Much valuable aid is derived from the nervous symptoms of pneumonia. Delirium is unfavourable in the main, but particularly when it is constant throughout day and night and occurs early in the course of the attack—say, on the second or third day. It is generally recognised with truth that quiet delirium confined to the night time is a symptom of little importance ; but, on the other hand, all practical men dread the advent of wild, noisy delirium with constant restlessness. Sleeplessness, a very common symptom, is usually associated with delirium when it presages a fatal determination ; but in any case it decidedly adds to the gravity of the illness, and has its weight in the prognostic scales. The pupils are frequently altered in cases with an unfavourable bias. They may be contracted—a condition often associated with cyanosis, a small rapid and empty pulse, and quiet delirium. Or they may be dilated and sluggish, when the delirium is generally noisy and irrepressible, with much excitement. As the end approaches there is not unfrequently rigidity of the limbs, which seldom lasts long and may be associated with spasm of the abdominal muscles and involuntary fæcal discharge.—*The Lancet, March* 12, 1891, *p.* 647.

25.—THE TREATMENT OF ACUTE PNEUMONIA.

By Sidney Coupland, M.D., Physician to the Middlesex Hospital.

Failing the employment of any specific remedy which can neutralise or destroy the virus, our treatment of every acute febrile disease must be largely limited to the support of the natural vital resistance of the body to enable it to withstand the effects of the poison, and, in addition, to diminish so far as may be the lesions incidental to the pyrexial state itself. In pneumonia, as a rule, the pyrexia, although high, is mostly comparatively brief, so that it may be questioned whether the nervous symptoms and the more formidable cardiac asthenia, which constitute the greatest dangers of the affection, may not be partly, or perhaps mainly, due to the action of the virus. On the other hand, the remarkable change from a state of imminent danger to one of comparative safety that ensues on the crisis

would point to the pyrexia itself being intimately associated with these grave symptoms, and justify us in treating the fever as such in the hope that some of these effects may be prevented. If the fever *per se* is not to be regarded as a source of danger, its occurrence affords at least an index of the continued operation of the virus, and the case is often most grave just before the febrile process comes to a stop ; nay, even the perturbation of the crisis is itself sufficient to quench the last spark of vitality in the patient. Recognising this, it is plain that one main line of treatment must be that which affords nutriment in a form easily assimilable, and given with a sufficient frequency to maintain strength whilst the febrile process lasts ; nor is there any need at the present day to dwell on this, which is the cardinal point in the treatment of all fevers, and has been so since the time of Graves ; but linked with this comes the important question of the administration of alcohol. The value of alcohol in pneumonia depends, I believe, as much on its utility as a temporary food as on its action as a cardiac stimulant, but its prescription must be guided by the same rules as govern its administration in all fevers, and have reference to the signs of exhaustion and cardiac failure that may be present. Remembering that we have to deal with a fever of limited duration, and knowing the importance of maintaining the strength beyond the crisis, it may be sometimes necessary to give very considerable doses – as much, for instance, as twelve ounces of brandy in the twenty-four hours— but one would reserve it until such indications arise, and not prescribe it as a routine, merely because the patient has pneumonia. There are many cases which neither require alcohol at any period nor are benefited by it ; but to discard it altogether on this ground would be as rational as to accuse it of causing the mortality from the disease, because the fatal cases are just those which have probably had the largest quantities of alcohol administered to them. I confess I do not know what we should do without this drug in some cases of pneumonia. The more diffusible stimulants, as ether and ammonia, are not equivalent to it, although they have their place as adjuvants in circumstances of marked cardiac failure. In such conditions, too, the prescription of digitalis, or of caffein, may be of benefit, and cases are recorded where the timely hypodermic injection of such drugs has apparently maintained the heart's action over the critical period.

In addition to these restorative and stimulant measures, the object of which is self-evident, it becomes a question how far it is advisable to employ means to mitigate the intensity of the fever itself. For, although as I have just said, it is by no means certain that the cardiac enfeeblement is solely due to the febrile

state, there can, I think, be little question that it is materially influenced thereby. In a long-continued fever like typhoid, there is every reason to believe that the cardiac degeneration, of which there is clinical and pathological evidence, is directly related to the pyrexial condition. Still, that the briefer fever of pneumonia is adequate to induce profound muscular changes is shown in the fact that one of the best marked instances of Zenker's degeneration of the recti abdominis muscles that I have seen occurred in a subject of pneumonia, who, in leaping out of bed in a fit of delirium, ruptured both the degenerated muscles. I am bound to state, however, that in many cases of fatal pneumonia the heart muscle has shown no manifest signs of degeneration. At any rate, it is plain that where the heart is already enfeebled, as in the alcoholic or aged, the subjection to a week's high fever is likely to still further impair its functional capacity.

It must, I think, be admitted that the antipyretic treatment, which has proved of such signal service in typhoid fever, is also of distinct advantage in pneumonia, quite apart from cases of hyperpyrexia, about which there can be no doubt as to its merits.

The choice of means for carrying out this treatment is considerable. For my own part, I incline rather in favour of the application of cold as against the administration of drugs. The pneumonic patient should be very lightly covered, and the value of free exposure to air was pointed out by the late Dr. Handfield Jones. He may be exposed to the air beneath a cradle covered by a sheet—a plan which will be likely to ensure a slight but appreciable reduction of the temperature of the body. Of all methods, I have myself most experience of that of cold compresses, which were recommended by the late Professor Niemeyer at a time when the use of poultices was considered almost indispensable in every acute inflammation of the respiratory organs. Such compresses are mostly quite as well borne as poultices, and are by some considered to have a direct influence on the inflamed organ. This is, I think, an open question, and it may not be absolutely necessary to apply them to the affected side of the chest, since their main effect is no doubt that of mitigating the pyrexia. One rather grave objection to their use is the necessity for their frequent renewal, which disturbs the patient, and for this reason, if for no other, the plan introduced by Dr. David Lees of applying ice-bags over the affected lung is to be preferred. Dr. Lees claims for the ice-bag in some cases a very considerable control over the extension of the inflammatory process, but here again I would rather attribute the somewhat striking results that he records to the general antipyretic action of the application.

Amongst many other methods of applying cold the most efficacious is undoubtedly the immersion of the whole body for ten minutes in a bath at a temperature of 85° F. This may be safely carried out in pneumonia as in typhoid fever, but it is, except in cases where the range of temperature is hyperpyrexial, seldom necessary to have recourse to a measure, the practical difficulties of which are considerable; nor, so far as I can judge, is the effect of the bath so lasting in pneumonia as in typhoid. It may, however, be taken as certain that this subjection to the influence of cold does not in the least increase the inflammation, or expose the patient to the risks of bronchitis.

Medicinally, we possess in quinine, salicin, antipyrin, acetanilide, phenacetin, and similar drugs, agents whose antipyretic properties have led to their free prescription in fever. That they have remarkable power in reducing temperature is undoubted; but respecting their employment in acute pneumonia it is necessary to speak in guarded terms. Of all fevers, that of pneumonia would seem the most refractory to their action, and we may thus be led to administer very large amounts, which are not without risk to the cardiac power, before any appreciable effect can be observed. Quinine, which in small doses has but slight effect in this direction, is at the same time the safest to employ, and it alone may be necessary if the cold applications are well borne. As to the others, I will content myself with merely expressing my preference for the treatment by cold to that by antipyretic drugs.

In thus placing in the forefront the treatment of pneumonia as a fever, I would not be thought to ignore the treatment of the lung condition, which may be so extensive as by itself to threaten life. I have already expressed my preference for cold compresses over poultices as the local application to the chest, and subsequently, when the physical signs indicate the persistence of pleurisy, counter-irritation is of service. For the early stitch, which is probably pleuritic in origin, nothing is more serviceable than the application of three or four leeches, and I can hardly recall a case where they have failed to give relief. But, as an alternative, the local hypodermic injection of morphine may be employed. The cough of pneumonia, in cases uncomplicated by bronchitis, is seldom very troublesome, but if it is then it may be allayed by medicated inhalations—for example, of eucalyptus—rather than by opiates. When there is great involvement of lung, and the dyspnœa and cyanosis, together with the physical signs of such wide implication and of a labouring right heart, then venesection is distinctly indicated, and may be freely performed with much benefit. Indeed,

it is only in such circumstances that venesection, once the routine measure for the treatment of pneumonia from the onset of its symptoms, can rationally be had recourse to. In such circumstances, also, the inhalation of oxygen has been successful in prolonging life until the resolution of the inflammation has set in. Mostly, I fear, the case in which one feels impelled to resort to such a measure is in desperate straits, and little aid can be rendered by it. Expectorants are not needed unless the case be much complicated with bronchitis, when, too, one must abandon the cold compress in favour of the poultice.

To enter into full detail concerning the treatment of all eventualities, or even of the various types of the disease, would occupy too much of your time, with little profit. It would involve the consideration of many a disease in which pneumonia occurs as a complication, as well as of such of its direct sequelæ as empyema and pulmonary gangrene. I hope, however, that my reticence in this matter will not prevent our hearing the experiences of others on any point that may occur to them. Especially should I like to invite an expression of opinion upon the best measures to adopt in dealing with pneumonia complicated by delirium tremens, and as to the propriety of giving opiates in these circumstances. The gravity of the prognosis in cases having this conjunction makes it all the more incumbent on us to agree as to the safest mode of dealing with it. If there be no disease of the kidneys, nor any marked bronchitis, I should myself employ morphine in preference to chloral or the bromides, and perhaps hyoscyamine is to be preferred to morphine, if it were not that its effect in delirium tremens is sometimes disappointing.

In conclusion, I feel that I have but touched upon the fringe of a wide subject, in presenting in merest outline the principles which it seems to me should guide us in dealing with a disease like acute pneumonia. It may be said that after all this is nothing but "expectancy," and the criticism may be a just one. Still, I would ask whether, in attempting anything more heroic or striking, we do not deceive ourselves, and whether it is not true that in acute disease our *rôle* is really that of one who, aware of the possible eventualities, and watchful of the indications of failing powers, strives to render assistance to the natural forces, and to bring their efforts to a successful issue in the combat with morbific agencies. To claim more than this for our art is to magnify our office, and lay us open to receive unmerited credit or discredit according to the issue of the case. To claim less would be to abrogate our function entirely, and leave all in the hands of Nature.—*The British Medical Journal, September* 26, 1891, *p.* 693.

26.—ON SOME VARIETIES OF BRONCHITIS AND BRONCHO-PNEUMONIA IN INFANTS.

By Octavius Sturges, M.D., F.R.C.P., Physician to the Hospital for Sick Children, Great Ormond Street.

There is no department of medicine, I think, so shadowy and ill-defined as the varieties—and, in consequence, the prognosis and the treatment of infantile bronchitis and broncho-pneumonia. As *post-mortem* examinations are for ever showing we lump together under one name a number of separate affections having in common the almost trivial factor or symptom, bronchial catarrh, a symptom which of itself furnishes a most uncertain and imperfect index of the illness and its progress. Part of this indefiniteness is due, no doubt, to the difficulty of the subject, but a large measure of it arises from the fact that babies seldom come within reach of systematic clinical observation. They make themselves unpopular by dying so often, and even in children's hospitals are admitted sparingly and with reluctance.

Taking only cardinal divisions we must recognise at least six classes of bronchitis and broncho-pneumonia in young children. Naming these in something like the order of their commonness, we have—

1. That resulting directly, and in about equal proportions, from chill, exposure, improper food or foul dwelling, and which, if it be recent, and the patient free from suspicion of specific disease, not rickety, and with no antecedent history of measles or whooping-cough, tends to recovery and may be called simple bronchitis or broncho-pneumonia.

2. Broncho-pneumonia and bronchitis, preceded by some specific fever, especially measles, and often the prelude of tuberculosis.

3. Broncho-pneumonia following diphtheria, whose tendency is towards death.

4. Broncho-pneumonia connected with enlarged bronchial glands, often characterised by spasmodic cough apt to be taken for whooping-cough, and which sometimes degenerates into phthisis.

5. Broncho-pneumonia involving at some part of its course empyema, it may be multiple empyema, where the prognosis depends very much on the treatment.

6. So-called vesicular, purulent, broncho-pneumonia wherein *post-mortem* the dilated ends of the minute bronchi—the infundibula—are found to be pus laden.

In these divisions I use the term broncho-pneumonia to cover bronchitis as well, lobular consolidation not being invariable.

These six varieties, it must be understood, are not wholly distinct. They run into each other. Yet they are sufficiently well marked for separate description, and will serve to label most cases of infantile bronchitis. Two further classes might, indeed, be added, namely, the bronchitis of rickets and of syphilis, but these in so far as the bronchitis itself is concerned do not differ from the simple form, and I would not multiply divisions without the sanction of anatomical difference.

I do not propose to discuss now simple bronchitis or broncho-pneumonia, an affection that may befall any healthy child, whether from exposure, improper food, dentition fever, defective hygienic conditions, even injury if the patient be an infant, the provoking causes being precisely similar to those that produce diarrhœa, and the two affections often concurring. Physical signs, I repeat, indicate very imperfectly the daily changes; and the same may be said of temperature. It is the breath-rate; the in-pulling of the ribs, or rather of the intercostal spaces, more or less; the aspect of discomfort; the character of cough, suppressed, irritable, spasmodic; the grunting or other sound with respiration; in a word it is the *inspection* signs, the ear aiding the eye, that both indicate and measure infantile bronchitis.

But it is not the lung alone that must be watched. The digestive organs and the intestines are always involved as well, and their disorder is within easier reach of treatment than is the pulmonary catarrh. Moreover, the good done here is always reflected in an improvement of the lung symptoms according to the well-known law of children's ailments denoting a closer sympathy than that which obtains in later life. And not only in diarrhœa and in vomiting is this sympathy indicated, there is a nervous participation as well, the more marked the younger the patient; and in infants extreme drowsiness, retracted head, surface tenderness, perhaps even convulsion, superadded to the lung and bowel symptoms, complete a picture of the bronchitis and broncho-pneumonia of early life in marked contrast to what you observe in adults.

This affection when conforming to the description I have called "simple" (which includes broncho-pneumonia as well as bronchitis), tends, as has been said, to recover, yet it needs careful management, and is easily injured by drugs. Of the many modes of treatment open to your choice, the very worst, in my belief, is that which puts drugs first, diet and regimen second. Equable warmth, milk and broth, with thin barley water as a drink; if breathing be difficult an ample linseed

poultice with about a sixth part mustard, lightly spread, and retained for some hours (the exact time depending on the observed effect) followed by the application of cotton wool. No pressure upon the chest by clothing or blankets ; no sucking at breast or bottle ; and, in my opinion, no medicine, or only such simple medicine or appliance as from time to time the symptoms may obviously indicate. Amongst these is steam inhalation for irritable cough. When hot water alone does not suffice, oil of turpentine or creosote or carbolic acid may be added (say half-a-drachm to a pint). If there be any drug whatever so generally useful in this affection as to deserve mention by name, it is grey powder. The furred tongue, foul breath, and fetid, greenish, or slimy motions (common accompaniments of that general condition of disturbance which, as I have said, gets named after its most prominent symptom, pulmonary catarrh) is greatly benefited by this medicine, to be given for some nights either alone or with such accompaniment as is suggested by the frequency or infrequency of the bowel actions.

I do not say that the treatment here foreshadowed is complete in itself, but I do say that cases of bronchitis of great severity often need no more than I have indicated.

The broncho-pneumonia of diphtheria and measles I will not dwell upon now. The high fatality of the one, the fear of tuberculosis in the other, are well recognised facts. It is to the remaining classes of the list that I now invite your attention, namely, bronchitis (or broncho-pneumonia) with enlarged bronchial glands ; that which involves empyema ; and that in which pus collects in the alveoli and distends them.

Enlargement of the bronchial glands, often past discovery by physical signs, will sometimes reveal itself by bluish, puffy face, and livid lips, the evidence of pressure on the superior vena cava and innominate veins, and, on mere inspection, is easily mistaken for cardiac dilatation. The gland pressure may sometimes suffice to cause œdema of the face, and when this is one sided it will indicate the seat of the pressure. Besides these signs, or without them, the superficial veins of the temples, neck, and shoulders, may be extra visible, while, spite of the asthmatic attacks common to both, auscultation will distinguish between gland enlargement and heart dilatation or emphysema.

The situation of the enlarged glands at the bifurcation of the trachea may give percussion dulness over the upper sternum, as well as bronchial breathing at one apex. In infancy such signs are probably caused in this way, but obviously they may be mistaken for early phthisis. The differential diagnosis is not possible on physical signs alone, yet it may be sometimes aided by bending the child's head back so as to bring extra pressure upon the vessels by tilting forward the lower end of the trachea.

In this position a venous hum is sometimes produced, which, according to Dr. Eustace Smith, (*b*) is "a certain sign that the glands of the mediastinum are not healthy." I will not dwell further upon this form of bronchitis, as there is at the moment no patient in the hospital to illustrate it. Many recover, but in some tubercle is developed through the agency of the caseating bronchial glands.—*Medical Press and Circular*, *June* 24*th*, 1891, *p.* 635, and *July* 1*st*, 1891, *p.* 4.

27.—ON THE RELATION BETWEEN EMPYEMA AND CROUPOUS PNEUMONIA.

By David Drummond, M.D., Physician to the Royal Infirmary, Newcastle-on-Tyne.

For some time past I have instituted very careful inquiries into the earlier history of all cases of empyema that have come under my notice, with a view to determine the nature of the lesion that preceded the pus formation in the pleural cavity. This was done owing to a growing dissatisfaction with the theory, so commonly accepted, that empyema results as a rule from simple pleurisy. The task has proved an exceedingly difficult one in many instances. In some it was impossible to come to a decision as to the nature of the lesion; in others the necessary information was supplied by medical friends who watched the cases from the commencement; and in a considerable number of cases, in which the pus formation took place after the admission of the patients into the infirmary, the point was determined by a special mode of investigation. As it was the intention to consider only what may be called the ordinary cases of empyema—those, for example, in which the classical treatment is so satisfactory—the cases having an undoubted tuberculous, traumatic, or septic origin were excluded from the inquiry; not because they are necessarily fatal, but because they naturally fall into distinct groups, and their nature is sufficiently obvious.

The result of the inquiry has gone to support the view entertained by the late Dr. Wilson Fox, who held the opinion that empyema does not result from a slow and gradual change in an effusion primarily serous, or, in other words, that a simple pleurisy has no tendency to go on to pus. This observer ascribed the pus formation to the special character of the inflammation; and up to this point I am in agreement with his views, but I entirely differ when he attempts to show that the special character of inflammation is supplied in a large number

of cases by operative interference, as in tapping. Whatever might have been the result of this measure in preantiseptic times, it is reasonable to suppose that with the ordinary precautions taken in every good hospital no such catastrophe can happen at present, save in the rarest instances. I was next compelled to take the view, which I wish now to advocate, that in some way croupous pneumonia was associated with the pus formation; that, indeed, the ordinary empyema, generally supposed to result from a serous or sero-fibrinous plural effusion (simple pleurisy), is, in the great majority of instances, a consequence of pleuro-pneumonia. That purulent pleurisy is not uncommonly preceded by pneumonia is proved by the fact that during the past two years, the period over which the inquiry has specially extended, seven cases of empyema have, to my knowledge, developed in the wards of the Royal Infirmary after pneumonia. The total number of pneumonias admitted during that period was about 130, so that upwards of 5 per cent. of the cases of croupous pneumonia were followed by empyema. In some of these cases pus was detected as early as the tenth day of disease, whilst in others three weeks elapsed before the condition was suspected. The following case is a fair example of the group:—

W. M'C., aged 25, a steelworker, living in a healthy and comfortable home, and a very moderate drinker, was admitted into the Royal Infirmary on March 8th, 1890. According to the statement of the patient and his friends, he went to work on March 2nd, feeling ill. During the day he shivered, and was obliged to return home. Next day he suffered from cough, with stabbing pain in the left side. The breathing became hurried, and the expectoration blood-tinged. On admission (seventh day of disease) the usual signs and symptoms of pneumonia were present. The respirations were 50, pulse 120, temperature 101°. The cough frequent; the expectoration rusty; marked eruption of herpes on lip. The left base was dull posteriorly, with tubular breathing and friction sound. Traube's space in front was resonant; the heart was in its normal position. On the morning of the ninth day of disease the pulse was 108, the temperature 100°, and the respirations 50. The dulness as marked as before. On the tenth day the pulse was 100, the temperature 99°, the respirations still rapid; dulness and tubular breathing much the same as before; friction sounds gone. Some effusion was now suspected. On the sixteenth day the pulse was 96, the temperature 100°, the respirations 40. The physical signs indicated fluid, and, on the introduction of a hypodermic exploring needle, pus was drawn off. Dr. Hume incised and drained. The patient made a good recovery.

During the past two years I have traced, without doubt, fourteen cases of empyema to an antecedent attack of pneumonia. In several other cases the history justified the opinion that there had been an attack of pneumonia, but this could not be proved. And I may state that during that time I have not met with a single case of simple pleural effusion that went on to pus, notwithstanding, in some instances, frequent tapping. In my attempt to procure information upon this subject—in which I have been largely aided by the employment, with strict antiseptic precautions, of the hypodermic needle used as an explorer—I have satisfied myself that, as a rule, croupous pneumonia is accompanied by a slight degree of plural effusion. It is true that the quantity is generally small, the layer of fluid being usually from $\frac{1}{2}$ to 1 centimetre in thickness. It is generally reddish in colour, though at times orange yellow. This fluid is usually exuded about the third or fourth day, and is generally at its height about the fifth or sixth, and disappears very speedily. In some cases it can only be demonstrated at the extreme base, and may be absorbed at once ; and in others it appears to be absent throughout. Its presence seems in no sense to influence the course of the attack. It would appear to be absorbed almost invariably during the last few hours in fatal cases, as it is seldom to be found at *post-mortem* examinations. I am unable to say what the relation is between this fluid and the subsequent empyema. In cases in which empyema follows pneumonia it is common to meet with an extension of the consolidation about the time the crisis is expected. A new area is affected, in which tubular breathing with friction sound can be detected—say on the ninth or tenth day. An examination now of the part first affected—the base, for example—reveals the presence of *râles*, whilst the breath sounds are less tubular, though dulness on percussion still remains, or has become more pronounced. The introduction of the exploring needle at this stage will often demonstrate the presence of pus. The temperature and pulse keep up, the former reaching 101° in the evening, and the latter running from 90 to 100. The respirations also continue high, and are seldom lower during the next few days than 35 or 40 in the minute. By degrees the breath sounds are diminished in intensity, the vocal fremitus is lessened, and the dulness assumes the flat, toneless quality so characteristic of fluid.

The importance of recognising the pneumonic origin of empyema cannot well be overstated. The transition from acute pleuro-pneumonia to empyema is often so gradual that the practitioner may be pardoned, as time advances, for regarding the case as one of lingering consolidation, and the patient may die with his pleural cavity nearly filled with pus. Again, the

early discovery of pus has in some cases so far simplified the treatment as to do away with the necessity of incising and draining. Witness the following case, treated successfully by my colleague, Professor Philipson, who has kindly given me permission to refer to the notes. I am sanguine enough to believe that before long it will be the rule, and not the exception, to cure empyema by a single tapping, provided the condition be recognised at the outset.

T. M., aged 19, a sailor, was admitted into the Royal Infirmary for right-sided pleuro-pneumonia on the fourth day of an illness ushered in, in the usual way, by a severe rigor. On examination, dulness on percussion, tubular breathing, and exaggerated vocal fremitus were evident over the right base, with pain of pleuritic character. Respirations, pulse, and temperature were 56, 100, and 103° respectively. On the seventh day the respirations rose to 72, the pulse to 116, and the thermometer stood at 104°. There was some delirium, and marked restlessness. On the eighth the face was cyanosed, delirium more pronounced, and physical examination revealed the fact that the pneumonia had extended to the middle and upper lobes. The expectoration was rusty, but very scanty. During the next few days the temperature varied from 99° to 101·5°, but was seldom above 101°; the pulse from 95 to 105, and the respirations from 32 to 60—average 45. On the eleventh day the delirium subsided, and the patient's general condition improved, and crepitus redux was to be heard at the base of the right lung. After the fourteenth day the temperature and pulse, though still indicating the febrile state, moderated considerably, but the breathing remained about 40 in the minute. Dulness continued at the right base, and the breath sounds and crepitations gradually became more feeble and distant. On the twenty-first the chest was explored, and pus drawn off by means of the hypodermic syringe. On the twenty-eighth day paracentesis was performed, and thirty ounces of pus withdrawn. On the forty-second day, as the base was still relatively dull, the needle was introduced once more, but with negative result. Eight days later the chest was again explored at the point of maximum dulness, and the result was the same. By degrees the dulness disappeared, and the patient made an excellent recovery.

This case cannot certainly be said to be unique, and I am disposed to think that if practitioners who have met with instances of empyema cured by one tapping will endeavour to recall the earlier history of the case they may be persuaded to admit a pneumonic origin. In conclusion, I would venture to suggest that some, at least, of the recorded cases of abscess of the lungs following pneumonia have been limited empyemas that

have found their way through the visceral pleura. True abscess of the lung, apart from sepsis or tubercle, I have never seen, and I have now for upwards of thirteen years superintended the *post-mortem* examinations at our Royal Infirmary.—*The British Medical Journal, July* 18, 1891, *p.* 113.

28.—ON PULSATING EMPYEMA.

By E. M. Light, M.A., M.B., Late Resident Medical Officer to the Leeds General Infirmary.

[Dr. Light publishes the records of three cases of pulsating empyema occurring during the practice of Dr. Eddison. All the cases were treated by incision and drainage. One case recovered, and two died.]

Although but few cases of pulsating empyemata have been reported, they are not in all probability so rare as generally imagined, because easily overlooked and not expected. Of the two recognised groups of cases into which pleuritis pulsans has been divided—(1) the intra-pleural pulsating pleurisy, and (2) the pulsating empyema necessitatis, in which there is an external pulsating tumour,—the three above examples fall under the latter heading, and present all the signs peculiar to it, which are as follows:—A localised subcutaneous swelling or swellings communicating with the pleural cavity, with systolic pulsations synchronous with the cardiac impulse, which may be well marked, energetic or weak, usually situated anteriorly between the sternum and axillary line, though found occasionally laterally or posteriorly; an extensive purulent effusion into the pleural cavity, nearly always left-sided. On palpating the swelling the systolic impulse is easily felt, sometimes more strongly than the cardiac, the pulsation also receding during inspiration and projecting during expiration. On auscultating at the level of the pulsations one can hear both heart sounds distinctly. Excessive displacement of the heart and rotation on its axis. Such comprise the most salient features of an empyema necessitatis. Formerly it was occasionally confounded with aneurism of the aorta, but from the mere facts of the disproportion between the feeble pulsations and the extensive dulness, an aneurism producing such an extent of dulness would give rise to very different expansile pulsations; the displaced heart, absence of breath sounds and œdema of chest walls, together with our present knowledge of the subject, is sufficient to warrant disregard of the existence of such a difficulty. With regard to the necropsy of a case of empyema necessitatis, the following conditions are almost classical of this lesion, and many

were found in both the above cases. In place of the left lung is an immense cavity, with a pleura devoid of adhesions, and either containing pus or not. The left lung cannot be made out until the pleural cavity is emptied. The parietal pleura is not sensibly thickened, but covered with a layer of pyogenic membrane. The intercostal spaces are dilated and stretched in certain places, and at times one can find one or more ribs denuded and altered by the pus. The left lung lies against the mediastinum from apex to base, and adherent to the left lateral surface of the pericardium. The visceral pleura is thickened, and in many cases are found one or two perforations leading into the bronchi. It is impossible to detach the lung from the pericardium, the adhesions are solid, also behind to the vertebral column, and above to the upper ribs. There may or may not be tubercular lesion of the lung. The whole of the lung looks like a fleshy mass the size of the hand; the tissue may be merely compressed or hard, elastic, fibrous, completely impermeable to air, and apparently but slightly vascular. It is an interstitial pneumonia—a pulmonary sclerosis. The bronchi terminate in culs-de-sac towards the pulmonary surface. The right lung is often healthy. In spite of the heart being pushed over to the right, this organ does not present any other alteration; there may be some serous effusion in the pericardium, but this is accessory. The external tumours have fistulous communications with a sinus more or less long, which unites them to the principal cavity. Of these observed pulsations during life many explanations have been given, but none are without objections. For instance, Comby states that pulmonary sclerosis must always exist, in which case pulsating empyema is absolutely incurable, as such a lesion signifies complete destruction of the lung. One knows from experience that this is not the case, and that simple compression is all that is needed, although at times pulmonary sclerosis may exist. The production of pulsations necessitates a concourse of circumstances which are not commonly found in the same patient. The empyema represents a vast cavity, closed in all parts and full of fluid, which possesses a certain tension, compressing and displacing the heart to the right of the middle line of the sternum. The heart in contracting reacts against this compression which it is submitted to, pushing back more or less strongly that part of the pleura which corresponds to the ventricular mass, and which is adherent intimately to the pericardium. The pleural sac of a left-sided effusion is in connection with the left ventricle, whereas a right-sided effusion would have its pleural sac more in connection with the right auricle and base of the right ventricle; hence, perhaps, one of the causes of the greater frequency of left-sided pulsating empyemata. Again, certain

conditions are necessary for their production : as, for instance, the heart must not be enfeebled by valvular lesions ; the contractions should be energetic, and the impulse sufficiently extensive between the ventricular mass and wall of the pleural sac. The liquid effusion must possess a certain tension, and exercise a compression on the heart itself, for the evacuation of a certain quantity of fluid in diminishing the tension of the effusion weakens and even suppresses entirely these thoracic pulsations. Now, the empyema is limited externally by the thoracic wall below by the diaphragm, and in the inside by the mediastinum and a variable extent of the surface of the lung, and the effect of transmitted pressure is to cause displacement of those parts offering least resistance, as the mediastinum, lung, and diaphragm ; and in order that the impulse communicated to all the surface of empyema may become appreciable to the exterior, it is necessary that there should exist a point of less resistance. This condition would be apparent if the resistance is considerably augmented from the diaphragm, mediastinum, and lung, which become relatively superior to that of the soft parts of the intercostal spaces. This resistance can be increased in two ways—(1) where the effusion is very great, and the displacement of the mediastinum, lung, and diaphragm is at its maximum ; (2) the presence of a thick, resisting, non-extensile, false membrane which lines the pleural sac. As to the lung, the resistance is in proportion to the completeness of the compression, and it need not necessarily be sclerosed or have lost all its property of re-expansion. One may add that the resistance of the thoracic wall may be relatively diminished by the slight development of false membrane on the parietal pleura, by the prolonged compression of the soft parts of the parietal pleura, by the prolonged compression of the soft parts of the intercostal space, and by the purulent softening of the parietal pleura itself. The walls of the external abscesses, which occupy the thoracic region, represent points of less resistance, and it is therefore on these points of least resistance that the stress of pressure is exclusively felt at each cardiac revolution, after transmission to the whole mass of fluid and internal surface of the pleural sac. Hence the appearance of these regions of pulsations more or less energetic and synchronous with the cardiac pulsations, conformably to the principle of Pascal, and, as in aneurismal dilatations, the force with which the pulsating wall is raised is greater as the surface of the wall is more extensive. Thus the larger tumours of an empyema necessitatis pulsate with greater force than those of less dimension and simulate veritable aneurismal dilatations. The prognosis is generally graver than that of the more ordinary forms of empyema. It occurs more often in chronic cases, chronicity

being always a serious element in the prognosis of empyema. But the presence of pulsations does not necessitate incurability, for total compression and sclerosis of the lung are not indispensable conditions for their production. That empyema necessitatis should become a very rare form of empyema considering our present knowledge and ready means of diagnosing the early presence of pus in the chest is both to be hoped and expected.—*The Lancet, September* 26, 1891, *p.* 705.

29.—ON THE TREATMENT OF COMMON COLDS IN CHILDREN.

By Herman B. Allyn, M.D., University of Pennsylvania.

The affection commonly called a cold consists, in its mild form, in a congestion of the mucous membranes of the respiratory tract, attended first with an outpouring of serum and subsequently of mucus and muco-pus. The cold may be limited to any part of the respiratory tract, but the nose and naso-pharynx are the portions generally involved. Frequently the process begins in the nose or throat, but, when the patient comes under observation, the bronchial mucous membrane is most affected. The stage of congestion is of brief duration, especially in those who are more or less subject to colds ; hence, when seen by the physician, the affection consists in an acute or sub-acute catarrh of the mucous membranes involved.

The nature of the process, as seen in children, does not differ from that in adults. Children are, however, more prone than adults to develop bronchial catarrh, and the nasal catarrh is, in the former more apt to become subacute and even chronic. The chief reason for the latter fact is doubtless to be found in the relative helplessness of children, who cannot cleanse their noses properly, and are often neglected by their parents. The spectacle of a neglected child of poor parents, with a disgusting muco-purulent discharge from the nose, is too common to occasion much comment. Another reason for the preponderance of these catarrhs in children is the difficulty attending treatment.

For a cold in the congestive stage, the child may be given a hot bath and then be put to bed, well wrapped in blankets to encourage free perspiration. Veratrum viride and aconite may also be of distinct service ; one or the other should be given in doses suited to the age of the patient to produce the effect desired. The atmosphere of the room need not be above 70° F., but while the mucous membranes are dry and parched a certain degree of moisture will be grateful to the little patient. This moisture can be provided by having a steaming teakettle in the

room, or by keeping a pan filled with water on the stove. If there should be no stove in the room, a gas-jet may be utilized, first suspending over it on top of the shade a sheet of wire, such as is sometimes used to avoid the scorching of a table-cloth by a hot coffee-pot. The best device for use in the sick-room is a Bunsen burner made with a flat, circular top, two inches in diameter. The gas-jets are made to emerge horizontally in a radiating manner beneath this top. The whole Bunsen burner can be screwed on an ordinary bracket in place of the customary burner. On this burner a tin cup or other small vessel can be placed, and the room quickly filled with vapour, medicated or not, as desired.

In the first and second stages of a nasal catarrh, menthol is an excellent remedy. All are familiar with Cushman's menthol inhaler, which is an admirable apparatus for adults ; its employment, however, cannot be made effective in the case of children ; while with infants its use is out of the question. For the benefit of these little patients, therefore, I am in the habit of ordering menthol in crystals, having about a third or half of a teaspoonful placed in water and heated gently until it begins to steam. The menthol vapour is liberated very rapidly. One must regulate the quantity of menthol and water in accordance with the size of the room, especially its height, and not keep doors and windows open unless the vapour of the menthol should become too pungent. As the menthol vapour is irritating to the mucous membrane of the eye, I prefer to use it in the sleeping-room of the child at night after it is asleep.

In the second stage of acute rhinitis, benefit will be obtained from the local use of a weak solution of salt in warm water, say about a fourth of a teaspoonful of salt, or even less, to a tumbler of water. The salt-and-water solution is so soothing that children who get over the first fright at having any liquid put into the nostrils, no longer make any objection. I have found a medicine-dropper the most serviceable instrument for instilling the lotion. Thorough cleansing of the nasal passages cannot, of course, be performed in this way, but, on the other hand, there is less risk of causing an acute inflammation of the middle ear than if a syringe were used. At a later stage in the catarrhal process, the "alkaline and antiseptic" tablets, prepared according to a formula by Seiler, are better than simple salt and water. Half of one of the tablets should be crushed and then dissolved in a third of a glass of warm water. Not infrequently the resulting solution is too irritating ; when this is the case a little salt should be added to it. Before the solution is introduced the nasal passages should, as thoroughly as possible, be freed of secretion. The solution should be employed several times a day. An extemporaneous substitute

for the tablets can be prepared by adding to a weak salt-water solution minute quantities of soda and borax. These are especially indicated when there is a tendency for the secretion to become thick and purulent, and for crusts to form. I have found a five or ten per cent. solution of menthol in almond oil, applied to the nostrils with a pledget of cotton or a camel's-hair brush, also very helpful. The local applications, with inhalations of menthol at night, as a rule, soon effect a cure in a subacute rhinitis.

When a child is disposed to "catch cold" easily and frequently, there is often a strumous habit present, and the tonsils are often enlarged. In such cases cod-liver oil, begun in the autumn and taken until the following spring, effects a great improvement. I have seen no good results from the syrup of iodide of iron, but the syrup of hydriodic acid has seemed to do good.

As a rule, before a cold subsides, there is more or less bronchitis, from extension of the catarrhal process. Generally only the larger and middle-sized tubes are affected. Local remedies are here of great value. In infants and in very young children, a stimulating liniment containing oil of amber, camphor and oil of turpentine, with soap liniment as a vehicle, is very serviceable. Poultices are, as a rule, not needed in mild cases of bronchitis occurring in the course of "colds." They can, however, be of great service. In using them in these cases I prefer to have them applied at night. They should be large enough to cover the entire chest, anteriorly and posteriorly. Strips of tape passed over the shoulders and fastened with safety-pins to the muslin of the poultice will aid in keeping the poultice in place. The poultices should be thin, and preferably made of flaxseed meal, with the addition of one part of good mustard to 16 or 20 parts of the flaxseed, according to the age of the child. The proportion of mustard should be small, as it is desirable that the child should sleep the entire night in one jacket-poultice.

When the flaxseed and mustard poultices are made up with glycerine and white of egg, a larger proportion of mustard can be incorporated, and the poultices can also be kept on longer, without risk of blistering the patient.

For older children, painting the chest gently in the morning with iodine once a day, until the skin becomes somewhat tender, is better than the application of liniments or poultices.

In these cases of mild bronchitis, inhalations of oil of turpentine, or, still better, oil of eucalyptus, are decidedly helpful. In the houses of the poor they can be given by keeping the patient in the kitchen and having on the stove or range an open vessel of water containing about a teaspoonful of the oil to a pint of water. It may be desirable to have the patient sleep in the kitchen at night.

Of internal remedies, nothing is better than the remedy almost universally employed—chloride of ammonium. It is best given at intervals of an hour or two, in doses appropriate to the age of the patient. When it has seemed necessary, I have sometimes induced the mother to take the chloride for the benefit of the nursing infant.

It is true that, so far as life is concerned, the majority of these cases would not terminate seriously if no treatment were employed. But it cannot be denied that in some cases a grave catarrhal pneumonia would be the ultimate result of a neglected cold, and in many others neglect to treat the case would lay the foundation for an obstinate chronic naso-pharyngeal catarrh, with all its unpleasant consequences. We cannot, therefore, afford to be indifferent to the treatment of these common colds.—*Medical News, August* 29, 1891, *p.* 235.

DISEASES OF THE ORGANS OF DIGESTION.

30.—ON PRIMARY MALIGNANT DISEASE OF THE LIVER.

By W. Hale White, M.D., Physician to Guy's Hospital.

During the last few years I have twice made an autopsy on patients who have died from primary malignant disease of the liver, and I have had one patient suffering from this malady under my care. In all three cases there could not be the slightest doubt about the fact that the disease was primary in the liver, for absolutely no other organ could be found to be affected, although the whole body was most carefully examined; and in the case of the patient in whom the growth in the liver was melanotic nearly every mole on the body was subjected to microscopical examination, in order to make sure that it was not the seat of the primary disease.

The accidental circumstance of my having seen three examples of so rare a disease in a short time incited me to look up the clinical records of the cases we have had at Guy's Hospital; for while many instances have been shown at the Pathological Society during the last few years, they have been brought under the notice of members of the Society on account of their pathological interest, and not because of the clinical symptoms, which in the published accounts are either omitted or stated with great brevity. In selecting the cases I have been careful only to choose those in which there could be no doubt that the disease was primary in the liver, as all the other organs in the body were examined, and found free from growth;

the only exception being that in some cases the lymphatic glands in the portal fissure or those on the upper surface of the liver were affected, clearly through secondary affection, and in one or two cases a minute nodule, which had obviously originated in the same way, was detected in the lower part of the lung. In consequence of this rigour in the selection of cases, some of which are recorded in the post-mortem records as primary disease of the liver are not here included, because other organs were involved. It may have been true that in them the liver was the seat of the primary growth, still the implication of other organs naturally destroys the clinical value of the case, for it is difficult to know to what organ to assign some of the symptoms.

One of the most striking facts about these cases is that it is possible for a patient to die of malignant disease of the liver without the presence of any disease of the liver being suspected. Thus a woman aged thirty-nine was admitted into the hospital for what was regarded as the vomiting of pregnancy; there was no jaundice, and no one even thought of disease of the liver. Premature labour was induced, but the woman sank. The post-mortem examination revealed the fact that the liver was the seat of extensive malignant growth, but that all the other organs of the body were absolutely normal. A case almost parallel to this is recorded by Tivy, in which, had not the abdomen been examined and the liver found to be enlarged, it would have been impossible during life to suspect disease of this organ, yet the man quickly sank and died.

The following analysis of the chief points of the ten cases we have had at Guy's Hospital brings out the leading features of the disease.

Age.—The fifth case, that of a boy aged twelve, had better be omitted from consideration here because, judging by his extreme youth and the exceptionally long duration of the disease, it is probable that his case is clinically at least an instance of some extremely rare affection of the liver, of which we know little. Of the remaining nine cases the eldest was seventy-one years old, and the youngest twenty-three. Five were more than fifty years old. Of seven cases recorded in the Pathological Society's "Transactions" during the past twenty years in sufficient detail to be available, and not included in the ten cases from Guy's Hospital, the oldest patient was sixty-nine years old, the youngest thirty-three, and five were over fifty. We thus see that it is a disease of adult life, and generally of old age—a fact which is equally true of secondary cancer of the liver.

Duration.—Malignant disease of the liver is never a long-lasting malady, but when it is secondary to disease elsewhere

the whole illness is considerably longer than when it is primary, for the first symptoms are due to the cancer in the organ primarily affected. When the liver is secondarily implicated it is often very difficult, and generally impossible, to say how long the cancer has been present in that organ before death. Still, we all know from experience how long such cases will last, even after jaundice has developed, so that the jaundice has time to become darker and darker. Fagge says, "It is remarkable how long such cases linger, and even revive for a time when apparently at the point of death;" and Frerichs says, "There are others where the disease is protracted over years."

It may be safely said that primary malignant disease of the liver is usually rapidly fatal, thus forming a striking contrast to those cases in which the organ is affected secondarily, and in which the patient often lingers for a long while.

Pain.—This is nearly always present. In the Case 10 which was under my care, it was agonising; sometimes it is very slight. The boy, who was only twelve years old, hardly complained of it at all. Dr. Burnet records a case of primary melanotic sarcoma of the liver, and distinctly states that the patient felt no pain; and Dr. Tivy records the case of a woman who was suffering from this disease but had no pain.

Tenderness.—The liver is usually mentioned as being tender; in Case 10 it was excessively so. Of Dr. Tivy's case it is stated that the pressure must be very hard to produce any feeling of tenderness, and Dr. Coupland records a case in which the organ was not tender. We may, however, conclude that the rule is for the liver to be both painful and tender.

Enlargement of liver.—The liver was always enlarged except in Case 3, in which it only weighed 36½ oz., this being one of the three examples of a contracting scirrhus of the liver resembling cirrhosis. I found that among fifteen cases which are available, in the Guy's Hospital and the Pathological Society's cases, for calculating the weight, the heaviest was 267 oz., the next 200 oz., and the least 36½ oz. The one of 200 oz. was the exceptional case in the boy aged twelve, and the one weighing 267 oz. is recorded as a case of sarcoma. If we exclude these two the average is 116 oz., or if we only exclude the boy the average is 127 oz. A very usual weight is from 120 to 130 oz. The surface is hard and nodulated.

Jaundice.—This symptom is thus referred to:—Case 1. Slight jaundice. Case 2. No mention. Case 3. Conjunctivæ yellow. Case 4. No decided jaundice till two days before death. Case 5. Slight jaundice a month before death; it increased. Case 6. No jaundice. Case 7. No jaundice. Case 8. Much jaundice. Case 9. No jaundice. Case 10. Became jaundiced shortly before death.

Thus we see that out of ten cases, in four there was no jaundice, in two others it did not appear till just before death; in three cases it was slight, and in one case it was considerable. We may thus conclude that in primary malignant disease of the liver, jaundice may be absent all through the illness; if present it is usually slight, and comes on late in the illness. We never meet with the long-lasting dark jaundice so common when the liver is affected with secondary cancer. The explanation of this may lie in the fact that, as the disease is rapidly fatal, there is not time for jaundice to supervene. It cannot be due to the circumstance that the portal glands are rarely enlarged in primary carcinoma of the liver, for in the only case in which the jaundice was deep it is expressly stated that the portal glands were normal. Probably they are not more frequently enlarged because the patient dies before there is time for infection to take place.

Ascites.—In six of the ten Guy's Hospital cases there was ascites, and in most of these it was sufficient to be detected during life; possibly in the remaining four there was a little serous effusion into the peritoneal cavity, but it was not striking. Probably we shall be near the mark if we say that in about a third of the cases there is definite ascites capable of detection during life, and in rather over a half serous effusion can be found after death. The growth often grew into and caused thrombosis of the branches of the portal vein, and this may in some cases explain the ascites. Often, no doubt, in ordinary cancer of the liver, cancerous peritonitis is largely answerable for the ascites; but that cannot be so in these cases, for in none of them was the peritoneum affected, except the small portion which covers the liver.

Other symptoms.—As might be expected, the patients are often wasted, sometimes they vomit; often there is constipation, but the stools are never mentioned as being pale. If the jaundice be sufficient a little bile may be detected in the urine, which in two out of the ten cases contained albumen.

Taking, therefore, all the cases of primary malignant disease of the liver together, except the case of the child, we find that for the most part it is difficult to distinguish them from instances in which that organ is affected secondarily. In both varieties the disease occurs in elderly men and women, and leads to wasting. The liver is usually painful, tender, enlarged, hard, and nodular. Jaundice, ascites, sickness, and constipation are often present.

There is, however, one important point which may help in a diagnosis, and that is the uniformly rapid course of the primary cases. Out of seventeen cases the longest duration from the first symptom was four months, the average duration

is twelve weeks, and it may be as short as eight weeks or less. This probably accounts for the fact that the jaundice is often absent, and that if present it is usually slight, and that the stools are never pale ; and in connection with this it is interesting to notice that the lymphatic glands in the portal fissure are not much enlarged. These patients never present the characteristic dark jaundice of long-standing secondary malignant disease of the liver. Consequently this collection of cases may help us in the future to form a correct diagnosis, for we may probably affirm of any case that has lasted more than four months that the disease of the liver is secondary. Perhaps, too, further experience will teach us to predict primary malignant disease of the liver if the temperature is considerably elevated. In many cases of secondary cancer of the liver, in which the jaundice is very deep, the patients die from cerebral symptoms which are grouped together under the name of cholæmia. As the jaundice in cases of primary malignant disease of the liver is often absent, or at least but slight, it is probable that when the disease is primary the patients do not die from reabsorption of bile.—*Guy's Hospital Report*, 1890, *p.* 59.

DISEASES OF THE URINARY ORGANS.

31.—ON THE DYSPNŒA OF ADVANCED BRIGHT'S DISEASE.

By Graham Steell, M.D., F.R.C.P., Physician to the Manchester Royal Infirmary.

My contention is that the *common* dyspnœa witnessed in the advanced stages of chronic Bright's disease, especially granular kidney, is cardiac in origin, and due principally to failure of the heart. I have no wish to deny the existence of a toxæmic dyspnœa in chronic Bright's disease. My present object is to endeavour simply to show that the common—the characteristic—form of dyspnœa in advanced Bright's disease is cardiac in origin. It is obvious that dyspnœa may arise in several ways in the course of Bright's disease. The patient suffers from breathlessness on exertion even slight, but at night distressing paroxysms of dyspnœa come on with special frequency and severity, and often apparently without exciting cause. The patient may be unable to go to sleep without being speedily aroused by distressing breathlessness. Often he cannot lie down. "Cheyne-Stokes' respiration" is not uncom-

mon. The paroxysms of dyspnœa mentioned as coming on at night while the patient is at rest in bed seem to be due to sudden rises of arterial tension, which greatly embarrass the failing heart. Nitrites often give temporary relief by diminishing vascular spasm, and the unquestionable efficacy of alcohol is no doubt due to its double action in diminishing vascular spasm and stimulating the heart at the same time. May we refer the equally unquestionable efficacy of morphia to its rendering the too sensitive excitability of the vaso-motor system less acute, while it in no way interferes with the action of the heart? Ten or twelve years ago, when I was Resident Medical Officer at the Infirmary here, I had the opportunity of repeatedly witnessing the extraordinary relief afforded by morphia administered hypodermically in the dyspnœa of cases of typical granular kidney, and as I then believed in the toxæmic origin of such dyspnœa, these results seemed to me utterly inexplicable. I well remember the minute doses of morphia with which I began the treatment, imbued as I was with the old doctrine. I soon found, however, that I could increase the dose with safety and much benefit to the patient. Even now I adopt the treatment with hardly less caution. The dose of morphia which a patient with advanced Bright's disease will tolerate can only be ascertained by experiment on the individual, and it is necessary always to begin with doses almost ridiculously small.

With the dyspnœa which we are discussing, there will usually be found the ordinary evidence of the circulation having become disturbed, as the result of heart failure ; the lungs are more or less congested, the liver is enlarged and tender on pressure, and there is some degree of lividity of the lips, etc.

Long before I became convinced of the cardiac origin of the dyspnœa of advanced Bright's disease, the frequent occurrence in this disease of pulmonary apoplexy used to surprise me. Now I see in the fact only a proof of the part played by heart-failure in the development of the features of the disease.

The condition of the urine of patients with chronic Bright's disease who suffer from the dyspnœa in question, may depart considerably from the type of urine which is described in books as typical of the chronic disease. The urine is usually concentrated and of deep amber colour ; it frequently deposits lithates, and contains, as a rule, a large amount of albumen. I remember a case, however, in which the much concentrated and lithate-depositing urine contained only a trace of albumen. In this case there was pulmonary apoplexy and general dropsy ; post-mortem examination revealed exquisite granular kidneys. The flow of urine is not, of course, a mere question of the state of the circulation, and I have observed a profuse flow of limpid

urine occur in the very presence of intense venous stasis during an asthmatic seizure in a case of chronic emphysema. No doubt, as a rule, however, falling arterial pressure is accompanied by a diminution in the secretion of urine, hence the concentration of the urine in the cardiac failure of advanced Bright's disease.

It may be of some interest to compare the "heart element" among the causes of the symptoms in anæmia and in Bright's disease. I am inclined to think that in neither disease has the heart condition received the attention which it deserves, and the reasons of this are not difficult to find. In cases of anæmia, the spanæmia has been held to be sufficient explanation of the dyspnœa and the hydræmia of the dropsy; but should not the very fact of the combination of dyspnœa and dropsy excite our suspicion with regard to the condition of the heart, and make us pause before accepting implicitly the fascinating explanations referred to. It cannot be questioned that the heart may become much dilated in severe and prolonged anæmia. The mitral and tricuspid regurgitation murmurs over the ventricles have been considered but as an extension of the murmurs in the large arteries of the heart and in the veins, which long experience has taught us to be due to no change in the vascular structures — an extension, as it were, of the soniferousness of the circulation characteristic of the blood-state. But has the ignoring of the heart-muscle, in cases of anæmia, not gone too far? I freely admit that only a very few of the many sufferers from anæmia suffer permanent damage to their hearts, thanks to the *vis medicatrix naturæ*. That a few, however, *do* suffer such permanent damage, passing through life with a crippled heart, I have no doubt. While in anæmia the abundant murmur-production associated with the blood-state has led to the heart-condition escaping due attention, in Bright's disease the fact of the absence of murmur has led to similar error. There was often no murmur to be heard over the failing heart of Bright's disease, and the enlargement of the heart was regarded as simply the result of the kidney disease: there was no question of the *failure* of the heart. The dropsy was due to the kidney disease. Lastly, the dyspnœa was toxæmic in origin, and thus also due to the kidney. Why, then, should the heart have been in question as the cause of the dyspnœa, and certain other symptoms? Plausible all this, but is it the truth?

Treatment.—If we admit that the dyspnœa of chronic Bright's disease is cardiac in origin, the treatment must, necessarily, be directed to the heart: yet not necessarily first of all to it, nor chiefly to it. The cause of its breaking down is excessive work, the result of increased peripheral resistance in the circulation, which, in its turn, is the result of impurities

in the blood—the products of the renal inadequacy. In any case there is abnormal peripheral resistance in the circulation. If we can diminish such peripheral resistance, surely by so doing relief can best be given to the labouring heart. It will not avail to goad it on, if, at the same time, its already too heavy burden is not diminished. By careful rather low living the frequent administration of laxative saline waters, the occasional administration of a sharp mercurial purge, and so on, much can be done to diminish peripheral resistance permanently. Modern pharmacology has supplied us with valuable direct means of diminishing peripheral resistance in the nitrites, although I must admit that they have not proved so serviceable in my hands as I anticipated they would. When we have done what we can to diminish the peripheral resistance, we may then apply ourselves to the treatment of the heart itself, and make use of heart tonics. Digitalis has the objection of increasing peripheral resistance, as well as stimulating the heart, and certainly is much less successful than in ordinary heart cases. Still, it occasionally acts extremely well. When it has failed, I generally give strophanthus. When there is much dropsy citrate of caffeine may establish a diuresis after the other drugs have failed ; but it is much less useful in the treatment of the dyspnœa. Nux vomica or strychnia often proves valuable, and is quite unobjectionable.

Lastly, there is the treatment of the paroxysm of dyspnœa. Alcohol gives rapid and great relief, but its frequent repetition must be injurious. The nitrites are of special use in the treatment of the paroxysm ; but here again I must confess to a certain amount of disappointment.

I have now to refer to the treatment of dyspnœa by morphia, and I would desire to emphasise the *extreme danger* of using the drug incautiously. Its lethal effects in Bright's disease have long been notorious. I always use it hypodermically, and of late have always combined it with atropia in proportional minute doses, which seems to render it safer while apparently not diminishing its efficacy. The treatment by morphia is only to be used as a *dernier ressort*, when the dyspnœa has become very distressing, and is accompanied by sleeplessness and restlessness. Then morphia, given cautiously, far from promoting a euthanasia by which life is shortened, is beyond all question capable of greatly retarding the inevitable end, while relieving the suffering of the patient as no other remedy can.—*The Medical Chronicle, October*, 1891, *p.* 8.

Surgery.

GENERAL SURGERY AND THERAPEUTICS.

32.—ON THE EFFECTS OF THE ANILINE DYES, ESPECIALLY THE BLUE PYOKTANIN, IN THE TREATMENT OF MALIGNANT GROWTHS.

By Willy Meyer, M.D., Surgeon to the New York Cancer Hospital.

[In reviewing the histories of four cases, and also considering his experience with pyoktanin as well as ethyl pyoktanin in his private patients, Dr. Willy Meyer states the following facts in regard to the treatment of inoperable malignant growths with these aniline dyes, as far as they have been exhibited up to date (April 8th).]

The aniline dyes, applied on the surface of exulcerated growths in ointment or powder (about 1 to 200), or in substance, have a strong analgesic effect.

Parenchymatous injections of pyoktanin solution, 1 to 300, repeated every second day till fifth day, the dose not exceeding one and one-half drachm, have in my cases proved to be innocuous to the general system.

The symptoms following the injections are either general or local.

The general symptoms, which can also follow the internal use of methyl blue (as recommended for inoperable malignant neoplasms by Dr. Max Einhorn of this city), are nausea or vomiting, weak and slow pulse, headaches, general malaise. These symptoms may come on the same day or the day following the injection ; as a rule, they do not come at all ; now and then there is a slight rise of temperature, usually subsiding within twenty-four to forty-eight hours.

The local symptoms are :

1. Pain following the injection. It may be of long or short duration, slight or severe. It is more severe where the cancerous infiltration affected by the injection is dense (epithelioma of face, disseminated cancer of breast, &c.). It seems that local anæsthesia may follow the injection.

2. Œdema, coming on either acutely, and then accompanied with slight redness (non-inflammatory) and pain on pressure, or

rather in a subacute form. This serous transudation of the growth may be the first step to reabsorption. The slight fever, observed in a number of patients, soon following the injection, had then to be looked at as being an aseptic one, possibly due to this reabsorption.

3. Breaking down of the injected tissue, with perforation of the skin or scar, which latter is the result of the operation (aseptic necrosis). By using a stronger solution, 1 to 200, the necrobiosis seems to be more rapid in smaller nodules. How far the surrounding infiltrated shell which is left behind is apt to spread farther can only be determined by continuous observation. It may be advisable to use a weaker solution, 1 to 500, instead of 1 to 300, as we can thus dye a larger portion of the growth in one sitting, without increasing the dose of pyoktanin. We then inject a larger quantity of solution and still need not apprehend general symptoms. Perhaps the weaker solution will not destroy the tissue so rapidly and thus rather induce reabsorption than necrosis. The sinus or sinuses established by the breaking down of the tissues give exit to a thick, dark-blue fluid, which, by microscopical examination, proves to be not coloured pus, but débris of the injected neoplasm. It is generally intermingled with shreds of necrosed tissue. In splitting these sinuses one may find necrosed, deeply dyed, ramified tissue, surrounded by normal undyed fat and muscles, which is easily shelled out. Whether it will be necessary and possible to remove the necrosed tissue by operation or whether this tissue will be extruded by means of a slow disintegration and longer secretion cannot yet be determined. We also have to prove yet, whether operative interference in this stage will really benefit our patients. Perhaps nature gets slowly rid of the necrosed tissue without help. As it seems, the carcinoma tends more to necrobiosis and perforation during this treatment than the sarcoma. I personally could so far only subject cancer cases to the colour cure. (V. Mosetig had his most striking results in patients suffering from sarcoma. He maintains that the injections, made under antiseptic precautions into neoplasms, which are still covered by healthy skin, produce necrobiosis and fatty degeneration, which is not followed by perforation, but by reabsorption. Billroth, on the other hand, saw rapid softening and perforation in two out of three patients who suffered from sarcoma and were treated with the injections).

4. Breaking down of the injected tissue (necrobiosis) with subsequent reabsorption. This will probably be oftener seen, if we stop the injections for some time as soon as spots in the growth have softened, and only start them again after these spots have shrunk (provided, of course, that they did not

perforate). Small, hard nodules in the skin, as seen especially in the disseminated cancer (recurring cancer of breast), can entirely disappear in a very few days, even if the pyoktanin solution was injected into their base. Perhaps the rapid disappearance is not reabsorption but only an illusion, which is caused by the œdema of the immediate surrounding tissue. A number of the nodules reappear after a few weeks, sometimes rather multiplied. The attempt at dyeing these small nodules directly, by pushing the needle right into them, is frequently unsuccessful, even in regard to the microscopical appearance, and causes severe pain.

An infiltration of hitherto healthy tissue with the neoplasm, in consequence of this treatment, has not been observed in a single case.

In no case did the growth spread during the treatment.

Applications of pyoktanin in substance on exulcerated tumours slowly removes the diseased tissue in the shape of dry gangrene. There is no suppuration under the eschar, on account of the strong antiseptic qualities of the dye, and consequently no cachexia. Pyoktanin is, however, no deodorizer. It also is no stypticum.

It may be advisable to combine the parenchymatous injections and local application of pyoktanin with giving aniline dyes internally. Pyoktanin is, in my cases at least, not borne by the stomach. Menthyl-blue seems at present to be the most preferable.

If it could be proved by further observations that continued injections determine the necrobiosis of "all" the diseased tissue, the use of the aniline dyes, especially pyoktanin in its different ways of application and methyl-blue, will have a permanent place in operative surgery, no matter how much time the cure demands, no matter whether it is accompanied by pain, inconvenience, and dangers to the patient.

It might then be advisable in patients who can still stand some loss of blood to remove as much of the new growth as can be reached with the knife or cautery, and then to inject. The size of the consequent granulating surface, as long as it is only healthy, would be immaterial. Skin-grafting would determine cicatrisation.

If, on the other hand, continuous observations should demonstrate that necrobiosis with perforation or with fatty degeneration and reabsorption does only affect a portion of the neoplasm, and diseased tissue is left behind in spite of a long and careful treatment, we will certainly do much better not to begin any such treatment at all, at least not as long as the tumour is still covered by healthy skin. Billroth has already emphasized this fact.

But suppose that future observations should really demonstrate that the aniline dyes do not specifically attack carcinoma and sarcoma, as Billroth seems to apprehend, their administration will nevertheless be of great value to the poor hopeless patients. We will be able, by using them, to check the "exulcerated" growth from further spreading, and thus lengthen life for some time at least; we will prevent cachexia; we will alleviate the sometimes excruciating pains in such cases of ulcerating neoplasms where neither morphine nor cocaine can bring any benefit.—*Medical Record, April* 25, 1891, *p.* 477.

33.—ON MALIGNANT PUSTULE AND THE USE OF IPECACUANHA IN ITS TREATMENT.

By N. C. Davies-Colley, M.C., F.R.C.S., Surgeon to Guy's Hospital.

[Mr. Davies-Colley publishes the narratives of thirteen cases of malignant pustule, and in the course of his paper refers to the use of ipecacuanha in that disease. We give here the headings of Mr. Davies-Colley's cases, in which ipecacuanha was applied to the wound as well as administered by the mouth, with the author's remarks upon the whole series.]

Case 1. Anthrax of right temple, excision. Ipecacuanha powder applied to the wound. Five-grain doses of the same powder given every four hours. The treatment was continued for ten days, by which time the patient had recovered. There was no sickness after the second day.

Case 2. Anthrax of front of neck; excision. Treatment the same as in case 1, with the addition of quinine for pyrexia. The quinine caused vomiting, while the ipecacuanha did not. Well at the end of 24 days.

Case 3. Charbon of neck; excision. Wound dressed with ipecacuanha powder, and ten-grain doses given internally; afterwards five-grain doses. There was some vomiting and diarrhœa. Recovery at the end of a month.

Case 4. Anthrax of face; excision and ipecacuanha treatment as in previous cases. Recovery.

Case 5. Charbon of neck; excision. Internal administration of ipecacuanha. Recovery.

In 1888 I saw in *The Lancet* an interesting paper by Dr. Edwin B. Muskett, which induced me to employ ipecacuanha in the treatment of malignant pustule.

Dr. Muskett, who is in practice in South Africa, states that splenic fever is common among the cattle there, and that human

beings are not unfrequently infected by them. His plan of treatment is to use ipecacuanha, applying it externally with water in a mixture of the consistence of cream, and administering it internally at the same time. During fifteen years he has treated fifty cases in this manner without a single death. When I saw this account, it seemed to me that one great advantage of this mode of treatment was that by administering such a remedy as powdered ipecacuanha internally it was probable that the drug in this form would not be immediately absorbed, but that the greater part of it would pass for some distance down the alimentary canal. If, therefore, it has any specific action upon the bacilli, it would be brought into contact with the small black sloughs and the ulcers which are so frequently found in fatal cases upon the mucous membrane of the stomach and intestines, and which are probably the cause of the vomiting, diarrhœa, and stomach pain of which my patients have so frequently complained. This probability is further increased by the consideration of the great benefit which results from the use of large doses of this drug in chronic dysentery, for it seems to me most likely that this was attributable to some specific action which it exerts in its passage down the intestinal tract upon the ulcers in which it may be presumed that the poison of that disease is chiefly located.

Dr. Muskett does not resort to excision of the cutaneous eschar. I have not as yet ventured upon omitting this precaution, which has been of so much advantage in the great majority of the cases hitherto recorded at Guy's Hospital. I intend, however, in future cases to proceed cautiously in the direction of removing less and less of the eschar and the adjacent skin. In the four cases in which I have hitherto had the opportunity of using the remedy, I have only ventured upon applying the ipecacuanha after excision, in place of the treatment with zinc chloride or the other antiseptics which I have usually employed.

In all my cases there was no difficulty in recognising the disease. There was in each the well-defined area of induration, with its purplish or blackened dry central depression and its encircling ring of vesicles or pellucid infiltration. In most of them there was also considerable œdema of the integuments for some distance from the eschar. With one exception, the patients had been in contact with hides, and the only one who had not was a wharf labourer, whose occupation would expose him to contact with various goods, and not improbably to that of bales of foreign hides. In Cases 1, 3, 4, 8, and 10 there was evidence of constitutional disturbance, but in some of them the symptoms were only slight, such as inability to sleep and loss of appetite.

In nearly all the cases the surrounding œdema had spread far beyond the primary eschar, so that the excision to which I resorted in each case must have left behind a considerable amount of infected tissue. In some there was also evidence of lymphatic absorption. Of the eight cases treated without ipecacuanha two died. In both of them the neck was the seat of the anthrax. I have before shown that the disease in this locality is especially dangerous. The reason for this would appear to be, firstly, the proximity of the larynx, which is apt to give rise to œdema glottidis ; and, secondly, the disposition of the cervical fascia, which enables the inflammation to spread downwards into the mediastinum.

The last five cases were treated with ipecacuanha, four by the internal and external use of the powder, and one by the internal use for three days only.

All recovered, although three out of the five cases had anthrax of the neck. One of these cases was in great danger. He had distinct constitutional infection upon admission, and the next day after the operation the swelling had increased, and there was some difficulty of breathing. In him some local sloughing occurred in the connective tissue close to the wound. It would seem, therefore, that the ipecacuanha had in this case acted rather violently upon the neighbouring tissues. In the three other cases, however, in which it has been locally applied no such result has been observed. Possibly, therefore, this phlegmonous inflammation should be attributed rather to the virulence of the anthrax infection. In one case, for example, we had an instance of great inflammatory swelling running up the forearm after the removal of an anthrax from the back of the hand. This, however, was treated by free incision, and no sloughing followed.

A good deal of vomiting was noticed in some of the cases from the internal use of the ipecacuanha. We must not forget, however, that this symptom also occurred in other cases which were not treated in this way. It may be ascribed in some measure to the constitutional infection, one result of which is the development of secondary anthrax foci in the mucous membrane of the stomach and small intestine. In two cases the dose of ipecacuanha was probably too large, *e.g.* gr. x ; hence the obstinate vomiting which followed its administration. But when the dose was diminished to gr. v, and guarded by the addition of morphia gr. $\frac{1}{6}$, as recommended by Dr. Muskett, it was taken without any inconvenience.

In order to ascertain the causes of the influence which ipecacuanha appears to exert upon anthrax, I asked my friend and colleague Dr. Washbourn to make some researches upon pure cultivations of the bacillus in his laboratory. Mr. Evans,

his assistant, has kindly furnished me with a note upon the result of this inquiry. As far as regards the bacillus itself, the destructive effect of ipecacuanha is clearly proved. The spores of the bacillus, on the other hand, are able to resist the influence of the drug, but as they are not found in the development of the disease in the human body this does not impair the efficacy of the ipecacuanha treatment.—*Guy's Hospital Report*, 1890, *p.* 11.

34.—ON THE TREATMENT OF HYDATID DISEASE BY INCISION AND EVACUATION OF THE CYST WITHOUT DRAINAGE.

By C. J. Bond, F.R.C.S., Surgeon to the Leicester Infirmary.

The surgical treatment of hydatid disease has shared in the general advances in surgery, and the incision and drainage of the cyst (supposing aspiration to be undesirable or to have failed) may now be looked upon as the usual and routine treatment.

This will probably remain so in all cases in which suppuration has taken place within the cyst, and so these cases must be excluded from the method of treatment about to be described.

Before, however, dismissing the subject of suppuration in hydatid cysts, it may be well to state that, although the suppuration (apart from the shrinking and calcareous changes which the contents of cysts undergo from the death of the parasite) is probably always due to septic agencies, yet it does not appear that these need always be introduced from outside the body. Thus in a recent case, in which a very large cyst between the bladder and rectum was aspirated with a fine sterilised needle, and clear fluid withdrawn, no symptoms occurred for a fortnight, and the cyst appeared to be shrinking; at the end of that time, however, the cyst began to refill, and febrile symptoms occurred, and, when opened later, the contents were found to be purulent and offensive. Here, I think, there is little doubt that the needle was not to blame, but that the suppuration in the dead cyst was due to its proximity to the rectum and the osmosis of intestinal gas, the cyst being only separated from the bowel by the intestinal coats, and the pressure so great as to cause partial obstruction before aspiration.

I wish, however, in the following remarks to bring into prominence a method of treating cysts which are still living and growing, and which contain clear fluid with or without daughter cysts; and this is the method of incision and evacuation of the cyst contents without any subsequent drainage, or with only temporary drainage for a few hours after the operation in certain cases.

The first case, to which I have already referred, is that of a healthy young man, a butcher—seen with Mr. Serres, of Osgathorpe, and Dr. Hatchett—in whom there was a large cyst, situated between the bladder and rectum, beneath the peritoneum ; this had grown upwards, filling the pelvis, blocking the rectum and urethra, and reaching up to the level of the umbilicus, and resembled a full-term pregnancy ; the bladder was dragged up with it, and its fundus, though empty and compressed, reached to within two inches of the umbilicus. This caused a difficulty during the operation, for, on making a median incision, the empty bladder uncovered by peritoneum was the first thing met with. The incision was prolonged upwards and the peritoneum opened above the bladder, and thus the cyst was reached. On opening the latter—which was aspirated three weeks previously—I found the elastic cyst proper had separated from the outer cyst wall, and lay curled up loose in the cavity, together with much pus and a quantity of smaller daughter cysts; the elastic membrane and contents were removed entirely and the cavity sponged out, and to this fact I attribute the rapid closing of such a very large cavity ; a large drainage tube was placed within the cavity. The more important feature in the case, however, follows. On exploring the general peritoneal cavity, I found in a reflection of the peritoneum in the right iliac fossa a small cyst, the size of a Tangerine orange. As I could not drain it, I incised the cyst and removed the elastic membrane and clear fluid, this being a growing cyst. I also scraped away some of the inflammatory adventitious cyst wall, immediately outside the elastic cyst proper ; but this was, I think, unnecessary, and might lead to hemorrhage. The remains of the cyst were then returned into the peritoneal cavity ; no bad effects followed, and at a subsequent operation on the same patient—to which I shall refer—no trace of the cyst could be found. After dealing with this cyst, I discovered another much larger one in the epigastric region ; but, considering the already large wound and serious character of the operation, it was decided to leave it for subsequent treatment. The patient recovered well, and at the end of three weeks the large cavity was a mere sinus, which soon healed.

He reappeared five months later, looking well, having gained a stone in weight, and without any symptoms of pressure on the bladder or rectum. On examination, however, I found that the cyst in the epigastrium had grown, and was now the size of a fœtal head, and there was another cyst or cysts at the lower part and to the left of the abdominal cavity.

A week later I opened the abdomen by a median incision passing through the umbilicus. I then discovered three cysts, the larger one referred to above, which lay beneath the trans-

verse colon and omentum, and two others the size of cricket balls, one in the left renal region apparently in connection with the left mesocolon, and one quite movable at the lower part of the cavity, situated entirely in the omentum. The upper cyst was first dealt with, the omentum being gently teased away and the surface of the cyst bared ; it was then tapped with a fine trocar and cannula, and most of the clear fluid drawn off without aspiration. I then drew the less tense cyst towards the abdominal wound with artery forceps, and incised it freely. On doing this I found that the white elastic cyst proper had shrunk somewhat away from the walls or ectocyst, and lay, together with daughter cysts, in the cavity ; it was easily withdrawn with ring forceps, and came out quite clean, although, from its brittleness, in several pieces. I then wiped the cavity out dry with a sponge, and allowed the cyst to fall back into the abdominal cavity. I then dealt with the other cyst on the left side of the abdomen in the same way, but the third or omental cyst was removed entirely after tapping by ligaturing off the portion of omentum in which it grew. I then found, on trying to draw out and fix the openings in the cysts directly to the skin, that a good deal of dragging on the abdominal contents occurred, so I simply closed the abdominal incision in the usual way, allowing two or three of the silk sutures to pass also through the cut edges of the cyst walls. Between these two drainage tubes were inserted, one into the lower and one into the upper cyst ; but, as there was very little discharge, these were removed in sixteen hours, and the abdominal incision allowed to close throughout. Union occurred at once, with the exception of a small spot at the umbilicus, which continued to discharge. The temperature remained normal throughout, and in a month's time he was out of doors. Unfortunately at this date, owing to some strain or chill or other cause, an attack of abdominal pain and violent vomiting occurred, which was followed by some discharge of pus from the incision, and Dr. Serres removed several pieces of the laminated lining of the upper cyst. This ceased in a week's time, and the patient soon became again convalescent.

It will thus be seen that the healing of the wound and recovery were not uninterrupted, and I attribute the throwing off of some pieces of the cyst wall to some attempts made in the case of the upper cyst, or that first operated on, to detach some of the inflammatory outer cyst lining in addition to the elastic cyst proper, which alone should be removed ; and further, from this result also it seems desirable that the emptied cyst, after suturing the incision in it, should be completely returned into the abdomen, as was done at the first operation, and not anchored to the site of the incision in the abdominal wall.

Judging from the experience of this case, it may, I think, be concluded that certain abdominal hydatid cysts, in which there is difficulty in bringing the cyst wall up to the surface of the body, can be well treated by incision and replacement of the cyst, provided that due care be taken to thoroughly evacuate the cavity of all its fluid and elastic solid contents, and to suture the inverted edges of the incision afterwards. The hemorrhage and other accidents which have been described as following on detachment of the cyst wall must have been due to the teasing away, not the elastic membrane, but the outer wall or ectocyst itself. The addition of a few catgut sutures in the inverted edges of the opening is to prevent the subsequent entrance of a coil of intestine. Any serum secreted by the cyst wall would, I feel sure, be rapidly absorbed.

Further, I see no reason why we should not deal with cysts of the liver and other organs in the same way, provided, of course, that suppuration had not occurred, and that sufficient length of incision into the cyst ($1\frac{1}{2}$ to 2 inches or more) could be made to allow of complete evacuation. The elastic lining shrinks on first withdrawing the fluid, and can be removed by gentle traction with the aid of ordinary ring or pile forceps. The advantages of a method which completes the treatment at one operation, and without any subsequent open drainage wound, with its attendant risks, are obvious. The operation is in fact, a supplementing and finishing of the method of aspiration which only withdraws the fluid portion, by the withdrawal of the solid portion also of the cyst contents, and is, I believe, the safer method of the two. I have myself seen alarming symptoms appear in a patient in whom I had just aspirated a large hepatic hydatid cyst.

It is also highly important, even in suppurating cysts in which drainage is necessary, to remove the solid contents at the time of incision. With regard to the individual case mentioned, multiple cysts, either sub- or intra-peritoneal, are not so very frequent; the recto-vesical space seems, however, to be a somewhat favourite locality, and from the experience of this and other cases of cysts in this position, and in such close proximity to the bowel, the risk of suppuration after simple aspiration appears to be a real one. In this case, also, all four methods of treatment were exemplified, namely: (1) aspiration; (2) incision and evacuation; (3) incision, evacuation, and drainage; and (4) extirpation.

It is, perhaps, needless to add, in conclusion, that strict asepsis must be observed—not necessarily, however, the introduction of irritating lotions.—*The British Medical Journal, April 11th*, 1891, *p.* 795.

35.—ON THE TREATMENT OF ERYSIPELAS.

By Charles W. Allen, M.D., Surgeon to the Charity Hospital, New York.

In view of what I have learned from those cases which have fallen under my observation, I think the plan of treatment which offers the best results is about as follows :

First, internally, such symptomatic treatment as the nature of the case seems to require. Antipyretics only in case of high or persistent fever (over 103½° to 104°). Then antipyrine in dose of at least gr. xv—xx, for an adult, guarded by alcohol. Cooling drinks. Calomel or saline aperients in full dose if constipation. If much weakness, alcoholic drinks given freely, especially at critical periods, and iron or iron and quinine ; digitalis if much fever and prostration ; bromide for delirium ; antipyrine or phenacetin for headache, with cold applications to head, and as concentrated and nutritious a diet as possible.

Secondly, locally, I would paint the patch and surrounding margin of healthy skin thickly with ichthyol in collodion, ʒj—ʒij to ʒj. If the scalp is the region affected, a watery solution or ointment of ichthyol can be employed. To arrest the spread I should in every case make an attempt either with the band of adhesive plaster or by scarification, or both, the latter to follow the former, in case the disease spreads beyond the adhesive strips. In erysipelas of the face which had not yet reached the forehead, or at least its upper part, I would apply a band tightly about the forehead and just above the ears, cutting the hair in a strip around if necessary to secure firm pressure. The chances of arresting the process here should be at least equal to those of checking the spread upon an extremity, for we have a hard bony base over which to make our compression. If the boundary is passed, then I should at once have the scalp shaved and apply another band higher up. The hair should be cut in any case in which the scalp is invaded or threatened. Then the same application of ichthyol in collodion can be made, as to the face or other part. If there be much tension, swelling, heat, and discomfort (which is not apt to be the case under collodion), any oily substance can be applied over it.

In treating erysipelas the uncertainty of *prognosis* must always be kept in mind. Cases to all appearances mild in the beginning may become severe and prove fatal, while formidable appearing areas may suddenly cease spreading spontaneously. It is scarcely more safe to say a case will progress favourably (though the majority do) than to claim that the particular line of treatment instituted has prevented an unfavourable termination, or proven abortive, unless a whole series of cases under a given method have terminated in a shorter than the average time.

Naturally, when the erysipelatous process has its sources in a pus collection, such as an abscess, pustule, ulcer, foul wound, carious tooth, diseased duct, &c., the first care must be to secure as prompt and thorough disinfection and cleansing as possible. Pus must be destroyed and purity maintained. A solution of the peroxide of hydrogen will often be found useful in effecting this purpose. In such case a spontaneous halt may be hoped for. In the same way a diseased mucous membrane must be cared for ; excoriations, ulcerations, rhinitis, or other disease of the nasal mucous membrane, or affection of the throat must be looked after. It is probable that every case of facial erysipelas starts from some local solution of continuity either upon the skin or adjacent mucous membranes, and we simply call some cases "idiopathic" or "genuine" when we fail to find the point where the micrococci have entered. I further believe it is because of this close proximity of various mucous membranes that erysipelas of the face is so comparatively frequent. That so-called idiopathic erysipelas of the face is identical with the traumatic variety, I think is shown by the clinical history, course, and identity of the skin lesions in both processes. Since instances of direct contagion are not often seen, I would call attention to the frequency with which two cases occurred in the same family—no less than six times in the 47 cases. Twice husband and wife, twice in brothers, once mother and son, and once grandmother and grandchild. It will be noted in the histories given that internal treatment played a very unimportant part, and I am convinced that cases do quite as well without the large doses of iron so habitually given in this country.

As a prophylactic measure in those predisposed to repeated attacks, great care should be taken to discover and cure affections of mucous membranes, carious teeth, ulcerations, or other disease processes or conditions which I have mentioned as possible means of maintaining the tendency. Recurrences after apparent cure must be kept in mind, and treatment continued sufficiently long to prevent them.

Since this paper was written I have applied the adhesive strip in three cases. Two were in erysipelas confined to the lower extremity. In the third it had already extended over the buttocks to the lumbar region before I saw the case. In the latter I applied a strip nearly two inches wide tightly about the abdomen, and painted the patch with 10 per cent. of aristol in collodion. No spreading occurred, and convalescence began at once. In one of the other cases the same treatment was successful, but failed in the second to arrest extension of the disease. — *American Journal of Medical Sciences, July*, 1891, *p.* 63.

36.—ON THE TREATMENT OF CHRONIC ULCERS OF THE LEG BY MASSAGE.

By A. Ernest Maylard, B.S. (Lond.), Surgeon to the Victoria Infirmary, Glasgow.

The object of this short contribution is to advocate a method of treatment for a very common and always a very troublesome class of cases—that of chronic ulcers of the legs. The subject is based on a few cases which have been successfully treated in the wards of the Victoria Infirmary. I will briefly describe the principles on which the treatment is founded, and its mode of application.

As a rule, these chronic ulcers arise from some slight accident to an area of the limb already in a condition to break down at the smallest incentive. The parts are in a condition of passive stagnation and engorgement, the result either, as most frequently, of varicose veins, or of some other obstructive influence. The result of this passive engorgement is a hyperplasia of the connective-tissue element, leading to much thickening of the parts around. This is shown by the denseness or hardness of the soft tissues, and not infrequently by some enlargement of the bone due to sub-periosteal deposits. Still further, the blood stagnation renders the new-formed tissue, as also that of the old, of very low vital powers. An ulcer, then, once formed is only too likely to extend. Another important factor is the mechanical obstruction which this venous engorgement and tough new-formed tissue causes in preventing the entrance of fresh arterial blood *to* the part, and the exit of used-up material by the lymph channels *from* the part.

What, then, is needed in the treatment of these cases is (1) the relief of the engorged condition of the veins by the removal of the cause which engorges them ; (2) the relief of the plugged condition of the lymph vessels ; (3) the readmission of arterial blood to the part ; and (4) the removal of deleterious exciting influences from the surface of the ulcer itself.

The recumbent position, which is usually enforced on the patient, or, failing that, the application of an elastic bandage when the patient is erect, usually aids much in removing the cause of venous engorgement of the part. But helpful as are these passive measures, they far from supply all the needs required. More active treatment is requisite to effect an entrance of arterial blood to the part, and an exit of effete material from it. This can only be done by "massaging" the limb—to wit, by rubbing, pinching, and kneading the part. The forcibly stroking the limb in an upward direction tends to drive on the venous blood, and let in the arterial : to force out

the contents of the lymphatics, and to allow the entrance of other effete products.

In order to massage the floor of the ulcer, I have adopted the following plan :—A piece of jaconet, sufficient in size to be held tightly around the limb, is dipped in some 1 in 2,000 bichloride of mercury solution, and then placed with its non-glazed side over the ulcer and surrounding parts. The smooth surface is dried, and a small quantity of vaseline smeared upon it. The palmar surface of the hand is by this means permitted to pass easily over the ulcer, and thus admit of its being massaged like the surrounding parts.

While the immediate result of this treatment has in every way proved good, I believe its more remote effects will be found to be equally valuable, for the cicatrix of an ulcer that has been massaged is seen to be well vascularised, and, therefore, much less likely to break down than when the ulcer has sluggishly skinned over. Further, it is a treatment which can and should be continued by the patient, so as to maintain the parts in a healthy condition.

Where these ulcers are associated with varicose veins, such veins ought to be exercised ; and thus a potent factor in the cause of the passive engorgement of the part removed.

The only other operative procedure (with the exception of skin grafting) which is sometimes of service is to dissect up a flap from the immediate neighbourhood of the ulcer, twist it round over and on to the freshened surface and edges of the sore. As with skin grafting, this should be done when the ulcer is healing. For by this time the massaging of the part has revivified the floor of the ulcer, and rendered healthier and more active the skin around.

With regard to the fourth requirement, the removal of all deleterious exciting influences from the surface of the ulcer, this simply means the cleansing of the ulcer from all septic matter.

After each daily massage the ulcer is washed with some 1 in 2,000 bichloride ; a piece of boracic lint about the size of the ulcer is dipped in the same solution, placed on the sore, and covered with a piece of gutta-percha tissue. This, as a rule, constitutes the sole kind of dressing used, with the exception that, as the ulcer heals, the mercury solution is changed for boracic acid lotion.

Improvement shows itself at once, and is most marked during the first week or two. The heaped up skin edges begin to disappear, and a sloping healing blue line is observed. The floor of the ulcer soon shows healthy granulations. The surrounding skin becomes early whitened or mottled, indicating the complete emptying of the congested venules.

Later, the skin around becomes more pliable, and can be pinched up and freely moved on the underlying tissues.

The cicatrix formed is well organised, and thus less liable to break down.

The treatment can be carried out by a nurse or by the patient's friends, and the massaging should be continued after healing has taken place, in order to maintain the skin and soft parts in a healthy condition.—*Glasgow Medical Journal, July*, 1891, *p.* 44.

37.—A NEW TREATMENT FOR TUBERCULOSIS OF THE JOINTS, &c.

By Dr. Lannelongue, Professor in the Faculty of Medicine, Paris.

Experience has shown that chloride of zinc produces a remarkable fibroid transformation in normal healthy tissues, and the same effect is to be observed when, instead of these healthy tissues, we have to do with damaged or tuberculous tissues. The drug fixes the tissues by killing the anatomical elements at the points of injection and within a certain radius therof. It also obliterates a certain number of the smaller vessels and capillaries, and, lastly, it provokes an inflammatory irritation of the vascular walls which diminishes the calibre of the arteries and veins within a certain and rather wide radius.

We are, however, brought face to face with another phenomenon of vastly greater importance. Very rapidly, often in the course of a few hours, a large influx of new anatomical elements takes place into the changed tissues by diapedesis, and probably also by cellular proliferation. This sudden and even violent eruption of young cells takes place not only at the site of puncture, but for some distance round, and they clog the periphery of the granulations and permeate to some extent the tuberculous neoplasm.

Forthwith a struggle commences between these newly-formed elements and the bacilli, more particularly between the latter and the migratory cells, having for its object the destruction and absorption of the bacilli.

Tuberculosis unopened and non-suppurating.—I have observed the reaction, especially in the knees, in cases in which there was an abundance of granulations in the culs-de-sac, in the elbow in tuberculous granulations of the synovial sheaths as well as in soft tissues and in bone. The effects vary according to the strength of the solution employed, and I shall therefore describe the effects produced by injections of 1 in 10, the strongest

solution I have been in the habit of using. The pain of the injections is merely that associated with all subcutaneous injections, but the drug sometimes gives rise to pain less fugitive in character, severe in some subjects, slight and ephemeral in others. Injections made into the lungs of children were not felt at all. The most marked feature is the swelling of the parts injected, and of the neighbouring tissues.

If the injections are made in the periphery of the synovial membranes, the first time at any rate, there is usually no effusion into the joint. Examination of the joint the day after the injection reveals several important modifications. First, there is a marked alteration in the consistence of the tumour, the fungous tissues are more tense and resisting. This condition is intensified during the days following the injection, and hard, even cartilaginous, nodules make their appearance at the seat of injection. These phenomena are especially noticeable in the knee, and they are the more marked the greater the volume of the fungosities. I have had opportunities of observing during several months the ultimate evolution of the diseased tissues, and though my observations on this point are in no sense complete, there has seemed to be a tendency towards the return of the sclerosed tissues to a looser connective tissue. This fact is not without importance, for it is in this way that the parts regain their suppleness and shape. The growth of the granulations has for effect to destroy the coaptation of the parts and diminish resistance to the extent of bringing about the dislocation of the articulation. The sclerotic process reconstitutes the resistance and reinforces the tissues which bind the parts together. Later on the synovial membrane tends to revert to its normal character. It is easy to see that these changes are reassuring so far as locomotion is concerned.

The general health of the patient is only affected to a trifling degree during this local transformation.

The most frequent and the most serious accident following the injections is extravasation of blood. Of this I have seen four instances, the largest being about the size of a walnut.

A complication inseparable from the use of this agent is the formation of sloughs. Rare when the injections are made deeply into the tissues, they are common if made superficially even in dilute solutions and in small doses. In very young children, and in parts where the tissues are thin, it is better to go as deeply as possible, and to employ only weak solutions, say one in twenty.

Unopened and Suppurating Tuberculoses.—This group comprises tuberculous abscesses, simple, symptomatic, sessile, or from congestion, osteo-synovites, either suppurating or complicated by external abscesses starting from the synovial

membrane, and communicating or not with the joint, suppuration of the sheaths of tendons and tuberculosis of certain organs. The treatment of these cases embarrassed me very considerably at first, but after thinking the matter over it seemed to me that if one evacuated the purulent contents and cleared away the layer of fatty matter or casein lining the sac there would only remain the granulations to be treated, and hence that the same treatment would be applicable as in the preceding class of cases. What I now do is to wash out the cavity with an ample supply of sterilised water, and then inject the periphery. The process of repair appeared to me to follow the same course as above described. My experience in this department has not been very extensive, and I have not as yet applied this method of treatment to congestive abscesses of long standing.

Open Tuberculous Abscesses.—These forms of suppurating tuberculosis may be simple, or associatad with osseous sequestra, with epiphysial osseous rarification, with cavities in the bone, &c. Only the last category enter into this group for the simple variety belongs to the preceding group. Of course, none could ever have entertained the idea that any remedy could have for effect to confer vitality upon products already dead. Now the effect of the injections is to set up irritation. This irritation is reparable in tissues still possessed of sufficient vitality to react ; they bring about on the contrary a much stronger reaction in flabby tissues, the structure of which has arrived at that stage of mortification at which it has become necessary for the organism to get rid of them. The injections in these cases seem to give the "spurt," producing a sub-acute condition indicating the necessity for operative interference. I mean by this that in a large number of cases of osteo-articular tuberculosis or tuberculosis of glands, one hesitates to operate, and especially as to the kind of operation to perform on account of the difficulty of ascertaining the exact condition of the parts, because it is hardly possible to make out the extent of the mischief, and because one cannot be sure whether or not there are sequestra, osseous cavities, &c.

The sclerogenic treatment in these cases not only provokes a sclerotic change in the less-damaged soft tissues surrounding the sequestra, but the injections seem to bring about a more complete disintegration of the cheesy masses. We find as a consequence that in these masses, just as in the immediate vicinity of sequestræ, there supervenes an inflammatory process characterised by phlegmonous symptoms and culminating in abscess formation. In this way parts of the tissues invaded are transformed, and we are called upon to act upon the other parts to the extent that may appear desirable. The necessity for

operative procedure is in no wise done away with, but its nature can no longer be decided upon the strength of any single set of rules, as is the case by other methods. Tuberculous affections are met with in every variety as to extent, seat, stage, &c. What we have to do is to endeavour to effect a cure, not only by destroying the foci of disease, but also by preserving such parts as are susceptible of cure, having in view to preserve the maximum degree of functional integrity.

Another advantage in these cases of the injections is that by obliterating the vascular channels they prevent auto-infection of the economy by the tubercle or other bacillus during the operation. The treatment should be abandoned only when the local changes are definitive, and when all trace of the disease has been eradicated.

The Modus Operandi.—Taking the knee as the type of the application of the method, each region of the synovial membrane should be considered separately. I plunge in the needle above the superior cul-de-sac, so as to reach the femur on a level with the reflexion in the fungating synovial membrane, and I deposit the fluid right on the femur, either inside or outside the peritoneum. In this way I make four or five punctures deeply in the half-circle formed by the superior cul-de-sac. About double this number would be necessary in the case of an adult. The parts of the synovial membrane below the patella on either side of the ligamentum patellæ are likewise accessible, but it is desirous to proceed systematically, and choose the spots with care.

The principal rules to observe in carrying out this method are (1) Avoid injections into the cavity of the articulation. (2) That injections should be made as far as possible at the points whence arrive the blood vessels; following up the granulations along the large ligaments, avoiding the vessels themselves wherever this can be done. (3) Avoid injections immediately beneath the skin. (4) Beginning with solutions of 1 in 40, the strength may be gradually increased to 1 in 10. In the lung I use 1 in 40, and in the epididymus 1 in 20. (5) In tuberculosis of the ribs, iliac bones, and glands, I use a 1 in 10 solution. (6) It is preferable to inject small quantities at a time, a couple of drops for example, multiplying the points of injection. (7) Before having recourse to the method, the limb should be placed in a good position and maintained there. (8) If, after a time, there are signs of recurrence, the treatment should be forthwith recommenced.

Conclusions.—So far as function is concerned, the patients may be considered as cured, but a cure properly so-called can only be affirmed on proof of the disappearance of the bacillus, and this I am not in a position to state. In any case the new tissue must tend to prevent systemic infection, and if the

bacillus remains, a question which will have to be determined experimentally, it will at any rate be encapsuled in such a way as to be comparatively inoffensive and, so far as our observations go, as to be incapable of doing any further mischief.—*The Medical Press and Circular*, *July* 15, 1891, *p.* 51.

38.—ON KOCHER'S OPERATION FOR REMOVAL OF THE THYROID GLAND.

By James Berry, B.S., F.R.C.S., Professor of Surgery and Pathology, Royal College of Surgeons.

[Mr Berry gives the following account of Kocher's operation in his Lectures on Goître :]

Professor Kocher has described two operations similar to that of Mikulicz, and to which he has given the names of resection-enucleation and resection-extirpation, or simply resection. Resection-enucleation is performed by Kocher as follows : He first isolates the lateral lobe in the usual manner, as in extirpation. Then the isthmus is cut through vertically, and the vessels at its upper and lower borders are tied. "Then with blunt instruments, or with scissors and knife, the glandular capsule is separated from the inner surface of the tumour until the posterior surface has been reached outside the region of the recurrent nerve. This spot must be measured accurately, since the nerve is sometimes drawn out of its normal groove between the trachea and œsophagus, and is bent over the posterior surface of the tumour. The glandular capsule is then again cut vertically. It is especially important that the section on the inner side should be made well above the level of the cricoid cartilage so as to avoid any possibility of wounding the recurrent nerve." The above description applies to the operation as performed for a more or less circumscribed tumour. In the next lecture I shall have more to say about such tumours and their treatment by enucleation. When there is no such tumour but the whole gland is more or less diseased, as in parenchymatous goître, then no separation of the capsule is made, but the section is carried directly backwards through the gland. This is resection-extirpation.

Comparing Kocher's with Mikulicz's operation, it will be seen that both agree in leaving intact that portion of the gland that is nearest to the recurrent nerve. But the former surgeon avoids separating the gland from the surface of the trachea, and especially refrains from tying up masses of thyroid tissue —a practice which he, quite rightly I think, strongly condemns. He says that, not only does it tend to prevent that primary

union which is so important, but that the application of the ligatures is apt to endanger the safety of the nerve. This may occur even when the greatest care is taken. With reference to this point Kocher says that formerly, when he had had less experience in removing goîtres, he had sometimes, when attempting to remove one, been obliged, on account of bleeding or dyspnœa, to tie the pedicle in one or more masses in order to cut short the operation. But he had noticed tolerably often that hoarseness from paralysis of the vocal cord was produced at the moment of applying the ligature.

The chief advantages of resection are : (1) That it enables the operator to remove, when necessary, both lobes of a goître and yet leave behind sufficient gland tissue to prevent the supervention of cachexia strumipriva. (2) By leaving untouched that portion of gland which covers the recurrent nerve it lessens the risk of injuring the latter. When compared with intraglandular enucleation it has the advantages that (3) it avoids the severe hemorrhage that often occurs in the separation of the tumour from its capsule, and that (4) the capsule of functionally useless gland tissue is not left in the wound. Thus the very deep sutures necessary to bring the sides of this capsule into contact to secure primary union may be avoided.

Details of the results of Mikulicz's operation have been published in a recent paper by Trzebicky. He records twenty-three cases. The patients were nearly all young subjects. In all cases dyspnœa was present ; in many it was very severe. One case proved fatal from recurrent hemorrhage ; in one tracheotomy had to be performed, but union by second intention, nevertheless, took place without trouble ; in one other case the wound healed in the same manner. In the remaining twenty cases, with the exception of two in which a little superficial suppuration took place, healing by first intention was perfect. [Further details of the cases and of the results obtained were then given.] The dyspnœa in all cases disappeared almost immediately after the operation, and, so far as is known, did not return. In no case was there any report of a return of the goître in that part of the gland that was left behind, although many of the cases were examined personally, and in many others information upon this point was obtained from the local doctors. In no case did any impairment of general health (cachexia strumipriva or tetany) follow the operation. Of the fourteen patients on whom the operation was performed on both sides, twelve are known to have remained in good health.—*The British Medical Journal, June* 20, 1891, *p.* 1329.

[For account of Mikulicz's operation see *Synopsis* of this volume.]

DISEASES OF BONES, JOINTS, MUSCLES, &c.

39.—ON WRY-NECK: ITS VARIETIES AND TREATMENT.

By Thomas Annandale, Professor of Clinical Surgery in the University of Edinburgh.

As the result of considerable experience in observing and treating cases of wry-neck, I would suggest the following classification of the varieties of this deformity, and I offer some remarks upon their treatment. (1) Simple; (2) spasmodic, temporary; (3) spasmodic, persistent; (4) complicated.

1. *Simple.*—This is the result of contraction of one sterno-mastoid muscle, which may appear as a contraction of the whole muscle or of only its tendinous portion. It is met with in every degree of aggravation, and its *causes* may be—

a. Congenital.

b. Injury to one muscle during child-birth, or from accident or surgical operation.

c. Paralysis or weakening of the muscle upon one side.

d. Bad habit of holding the head and neck to one side, as in glandular and other painful affections.

Treatment.—Stimulate the weakened or paralysed muscle by proper massage, galvanism, counter-irritation, and attention to health; and if these means fail, divide the contracted muscle. If the contraction affects the tendinous portion only, the division of this portion is usually sufficient.

2. *Spasmodic (Temporary).*—In these cases the spasmodic contraction of the one sterno-mastoid muscle is not constant, and other muscles of the neck may be similarly affected.

Causes.—Some temporary derangement of the general nervous system, or some local nerve or muscular irritation. This condition may become more permanent if not relieved. I have seen cases in which temporary local nerve irritation in connection with inflammation of the cervical vertebræ or other cervical tissues has caused spasmodic contraction of one sterno-mastoid, and this contraction has become persistent owing to the difficulty of overcoming the acquired habit of holding the head to one side.

Treatment.—Careful attention to the condition of the general nervous system, the removal of any probable cause of local irritation if it can be discovered, and properly applied massage.

3. *Spasmodic (Persistent).*—This variety may depend upon a more or less continuous spasmodic contraction of one sterno-mastoid muscle only, but not unfrequently other muscles in the neck are also affected. In some of these cases the condition is

most distressing, the head and neck being constantly jerked to one side, or jerked backwards, the patient not having any control over such movements. It may be possible for the patient to steady the head for a short time, but on attempting to turn it, it starts off again, and the uncontrollable jerking continues. Cases of this kind vary as regards the amount of spasmodic movements and their frequency.

Causes.—May result from the more temporary cases, or from special nerve irritation, but the most common cause I have met with is the result of constant and long-continued movements of the head and neck to one side, such as are required in certain occupations,—in the case of compositors and workers at certain machines for instance.

Treatment.—This class of case does not, as a rule, become cured by any general medical, local, or mechanical treatment; but the division or excision of a small portion of the spinal accessory nerve high up in the neck is followed by good results. On the 7th of February, 1878—following the example of M. de Morgan (see *British and Foreign Med. Chir. Review*, July, 1866)—I operated upon a case of this kind by dividing the spinal accessory nerve. This case, which was a perfect success, was published in *The Lancet* for April 19th, 1879. Since then, I have operated with the same good result upon a second case; and Dr. Cotterill has similarly treated, with an equally good result, a third case in my wards. In all these three cases the condition was the result of the patient's occupation. In one, the patient worked at a power-loom machine, and the other two patients were compositors.

It is well here to note that after the division of the spinal accessory nerve the spasmodic movements do not always cease at once, but in some cases the muscular contractions and irritability remain for a time before the case is perfectly cured.

Mr. Southam (*British Medical Journal*, July 11th, 1885, and January 31st, 1891) gives an account of several successful cases of this deformity treated by the excision of a portion of the spinal accessory nerve; and Mr. Collier (*The Lancet*, June 21st, 1890) reports a successful case in which he passed round the same nerve a wire ligature slightly compressing the nerve. I think that the division of the nerve, taking care to separate the divided ends, or the excision of a portion of it, have given the best results, and that, therefore one of these methods should be adopted in preference to merely stretching or compressing the nerve. I am also of opinion that the best incision to reach the nerve is one made along the upper and anterior border of the sterno-mastoid muscle.

Aggravated cases of this spasmodic variety are met with in which the posterior cervical muscles are also affected. In one

such case, after the division of both spinal accessory nerves had failed to give relief, I, by subcutaneous incision, divided all the attachments of these muscles to the occiput. The relief was, however, only temporary, and a better proceeding in these cases will probably be to divide or excise portions of the posterior branches of certain of the cervical nerves. Mr. Noble Smith in a letter to *The Lancet*, June 28th, 1890, refers to a case in which he, after excising a portion of the spinal accessory nerve, subsequently for spasm of the rotators on the opposite side excised portions of the posterior branchess of "some of the cervical nerves." The result was successful.

My friend Professor Keen, of Philadelphia, has recently made a careful study of the question of division of the cervical nerves in this deformity, and he has published an important paper (see *Annals of Surgery*, January, 1891), giving rules for an operation which will enable the surgeon to divide the posterior divisions of the first three cervical nerves, so that the chief posterior cervical muscles which rotate the head may be acted upon and spasm of them relieved. Professor Keen's rules are as follows :—

"*First step.*—The field of operation having been shaved and disinfected, make a transverse incision about half-an-inch below the level of the lobule of the ear, from the middle line of the neck posteriorly, or even slightly overlapping the middle. This incision should be $2\frac{1}{2}$ to 3 inches long.

"*Second step.*—Divide the trapezius transversely.

"*Third step.*—Dissect up to the trapezius and find the occipitalis major nerve as it emerges from the complexus and enters the trapezius. In the complexus is an intra-muscular aponeurosis. The nerve emerges from the complexus at a point between this aponeurosis and the middle line, usually about a half-inch below the incision, but sometimes higher up, and then enters the trapezius. It is always a large nerve of the size of a stout piece of catgut, and it is easily found if sought for at the right place.

"*Fourth step.*—Divide the complexus transversely at the level of the nerve. This division should be made by repeated small cuts, so as not to cut the nerve which is our guide, after which dissect the nerve still further down from the anterior surface of the complexus, where it arises from the posterior division of the second cervical. Cut, or better, exsect a portion of the posterior division before the occipitalis major arises from it, so as to catch the filament to the inferior oblique muscle. This divides the *second cervical.*

"*Fifth step.*—Recognise the inferior oblique muscle by following the sub-occipital nerve towards the spine. The nerve passes immediately below the border of the muscle.

"*Sixth step.*—Recognise the sub-occipital triangle formed by the two oblique muscles and the rectus capitis posticus major. In this triangle lies the sub-occipital close to the occiput. It should be traced down to the spine itself, and be divided, or better, exsected. This divides the *first cervical.*

"*Seventh step.*—An inch lower down than the occipitalis major, and under the complexus, is the external branch of the posterior division of the third cervical to the splenius. When found it is to be divided or exsected close to the bifurcation of the main trunk. This divides the *third cervical.*"

4. *Complicated.*—Included in this class are those cases in which one of the following conditions is present :—

a. Disease of the cervical vertebræ.

b. Cicatricial contractions from wounds, ulcerations, or other conditions causing destruction of tissue.

c. The presence of enlarged glands, or morbid growths, or other diseased conditions in the neck.

Treatment.—In this variety of wry-neck the particular complication may prevent the cure of the deformity, but when possible the complicating cause should first be relieved or removed, and then manipulative or operative means used to overcome any distortion which may remain.

When in any case of wry-neck tenotomy of the muscle has been performed, massage and movements of the head and neck should be carefully carried out when the wound has healed and the muscle has united. Except in very aggravated cases, special splints or other appliances are not required after such an operation.—*Edinburgh Medical Journal, April*, 1891, *p.* 881.

40.—ON HALLUX FLEXUS.

By William Anderson, F.R.C.S., Hunterian Professor in the Royal College of Surgeons.

Hallux flexus may be defined as a progressive diminution of the normal range of extension at the metatarso-phalangeal, or, more rarely, at the inter-phalangeal joint of the great toe. It is unassociated with any disease of the bones, cartilages, or synovial membrane of the articulation, and originates only during the period of active growth. It is, in fact, a "hammer great toe, and it will be found strictly analogous to that disease, occurring under the same conditions and affecting the corresponding articulations.

Symptoms.—In a typical case of hallux flexus the patient, usually a boy near the age of puberty, suffers some little pain about the metatarso-phalangeal articulation of the great toe in

walking, at the moment when the weight of the body falls chiefly upon this joint. Rest affords complete relief, and the structures about the articulation show no signs of inflammation. As time goes on the pain increases and becomes associated with a sense of rigidity of the toe, and the power of full extension becomes lost. The diminution of the range of movement is very gradual, and usually it is not until the proximal phalanx can no longer be extended beyond a line corresponding to the prolonged axis of the metatarsal bone that the condition is brought before the surgeon. In more extreme examples the toe becomes actually bent below this axis, so that it forms with the metatarsal bone an obtuse angle with plantar opening. The foot is now seriously crippled. Over-use in walking induces much suffering, and any attempt at passive extension is extremely painful, while flexion remains unimpaired. The head of the metatarsal bone thrown into prominence by the unwonted position of the proximal phalanx, looks abnormally large. In some cases a reflex hyperæmia of the tissues surrounding the joint may be induced by forced exercise; but there is rarely, if ever, any effusion within the capsule. The patient finds walking more and more difficult, and to avoid pressure upon the contracted articulation limps on the outer edge of the foot; but this gives little relief, and at last he is compelled to rest. In the more severe cases the patient consults the surgeon; in the slighter forms he puts up with the inconvenience, and we may assume that he recovers without professional assistance, for the condition is very seldom found after the attainment of full adult life.

An analysis of my series of twenty-six cases shows that the deformity is much more frequent in boys, the number including only three girls. It was bilateral in one case only, right-sided in seventeen cases, left in eight, and affected the metatarso-phalangeal articulation in every instance except one—that of a woman, in whom the distal joint was involved. In only three cases did the flexion pass the prolonged axis of the metatarsal bone, the angle reached in the worst example being 150°; in the rest the toe during full extension was either in a line with the metatarsal bone, or formed with the latter a very obtuse angle, 170° to 160°, with the opening towards the dorsal aspect. The ages at which the symptoms were first noticed ranged from twelve to eighteen, in the greater number lying between fourteen and sixteen. The associated deformities were: excessive length of toe in two cases, this amounting to a distinct giant growth in one; hammer toe (second) in one, hallux valgus (slight) in three, flat-foot in four, and slight varus in one. In fifteen cases the feet were perfectly normal in shape. The duration of the disease before the patient came under treatment varied from three months to four years. Occupation appeared to exercise little

influence. The subjects were mostly schoolboys, labourers, and errand boys, but there did not appear to have been any unusual strain upon the powers of endurance, except in two instances. In two cases the condition was attributed to the use of short boots, but in the others no complaint was made as to the foot covering, and the boots in wear at the time of attendance were as unobjectionable as the materials and plan of the modern boot will allow. Constitutionally the patients were, for the most part, a little below the average in physique ; one (a girl) was tubercular, one was a child of rheumatic parents, but none had suffered from rheumatism. The result of inquiries with respect to inherited tendencies was less striking than in the case of hammer toe. In one instance the father had had double hammer toe ; in another a brother had suffered from hallux flexus at the age of sixteen, and became cured without medical intervention in the course of three years ; but in the majority no satisfactory information on the point could be obtained.

Progress.—There can be little doubt that the natural tendency of the complaint is to subside under the mechanical influence of ordinary exercise, and hence, although the deformity is fairly common in youth, it is rarely found in fully developed adults. The only exception to this rule was the case in which the distal joint was affected ; here the contraction began about puberty, and was still present at the age of fifty-two, but the defect never interfered materially with locomotion. It is possible that some of the cases terminate, as suggested by Mr. Davies-Colley, by conversion into hallux flexus, but my inquiries have failed to confirm this.

Pathology.—The origin of the condition may be explained in the same manner as that of hammer finger and hammer toe. There is a physiological variation in the range of movement permitted in the articulations of the great toe similar to that demonstrated in the fingers and lesser toes, and in examining a number of healthy feet it will be found that the position of extreme super-extension at the metatarso-phalangeal joint may lie at any point between 30° and 110° beyond the prolonged axis of the metatarsal bone ; but if the movement of extension be checked at less than 30° the symptoms of hallux flexus supervene. The chief distinctive feature in the anatomy of the joint lies in the substitution of two sesamoid bones, with their tendons and connecting tissue, for the glenoid plate developed in all the other articulations, and it is those structures that receive the distal attachment of the plantar fibres of the lateral ligaments. The function of the lateral ligaments, however, remains the same as in the other toes, and the range of the movement of extension is governed by the development of their plantar fibres. The opportunities of examining the morbid

anatomy of the complaint are necessarily very few. Mr. Davies-Colley's specimen, which he has kindly allowed me to examine, proves that the structures restraining the movement of extension correspond to those concerned in the production of hammer toe, those fibres of the lateral ligaments which blend with the osseo-tendinous structures replacing the glenoid plate ; and the cause of the deformity in both cases appears to be an irregularity of nutrition by which the ligamentous fibres undergo imperfect longitudinal development, and consequently induce premature arrest of the movement of extension. This developmental defect is probably unconnected with any special error in the form of the shoe. Like hammer toe, the deformity occurs at the age most prone to nutritive disturbance ; but, unlike it, tends to undergo cure without the help of the surgeon, because the weight of the body serves as an extending force, which sooner or later proves stronger than the resistance opposed ; while in hammer toe the lesser digit is not essential to locomotion, and its retraction at the metatarso-phalangeal joint frees the inter-phalangeal joint from all necessity for action, and favours the permanency of the vicious position.

Treatment.—Bearing in mind the fact that true hallux flexus has a natural tendency to recovery, it is obvious that the graver surgical operations can seldom be called for. In the case of hammer toe a resection of the articulation may be undertaken without hesitation, because the deformity is more likely to become aggravated than relieved by lapse of time, and because the function of the digit is not sensibly interfered with by obliteration of the joint ; but in the case of the great toe the destruction of the metatarso-phalangeal joint inevitably entails a permanent alteration of gait, and perhaps worse troubles. The treatment I have adopted in the milder cases is to instruct the patient to perform a regulated series of passive movements of the toe by the use of his hands, aiding the process by massage of the lower and inner side of the foot, and as the tenderness passes away to practise walking on tip-toe until the normal degree of extension is restored. In more severe examples I have extended the joint forcibly under an anæsthetic, afterwards fixing it in the super-extended position in a plaster splint. The result of this plan in the two cases tried has been very satisfactory. Should the severity of the symptoms and the intractability of the deformity under milder measures call for an operation, we have the choice of several plans :—1. Section of the ligamentous and tendinous structures which limit extension : This may be effected subcutaneously or by means of an open wound, on the principle to be presently described. I am not aware that the subcutaneous operation has been attempted, but there is little doubt that it would involve division of the

vessels and nerves which run directly over the tissues to be attacked. In the open operation this injury can be avoided, and the extension can then be made after the healing of the wound. 2. Excision of the head of the metatarsal bone: The effect of this would be the obliteration of the joint and a shifting of the point of support to the distal joint, which is ill fitted to discharge the office. The operation was performed by Hueter for hallux valgus with very bad results. 3. Excision of the proximal half of the first phalanx: This was successfully effected by Mr. Davies-Colley, but the objections to it, although less than those to the operation last mentioned, are of a similar nature. 4. Osteotomy of the metatarsal bone above the head, with excision of a dorsal wedge, so proportioned as to allow the toe to be placed in a position of super-extension: This leaves the articulation intact, and affords all the advantages offered by the other methods. Should a relapse occur from further changes in the joint structures, other operations would still be available. I have not had occasion to carry this out in any case of pure hallux flexus, but I have found it easy and successful in a similar deformity due to rheumatoid arthritis.—*The Lancet, August 8th*, 1891, *p.* 279.

41.—ON HALLUX VALGUS.

By William Anderson, F.R.C.S., Hunterian Professor in the Royal College of Surgeons.

This, the most common of all digital deformities, may be defined as an eversion of the great toe at the metatarso-phalangeal joint, and in some instances of the phalangeal joint also, with alterations, adaptive or causative, in the bony and ligamentous apparatus of the articulation. In its milder forms it must be regarded as a simple malposition caused by the use of boots constructed on the principle of median symmetry. This fault is more common in the shoes made for women than in those worn by men, and consequently the distortion is far more frequent in the latter sex. In a large number of patients examined by Dr. Robinson and myself in the female wards of the Mile End Infirmary, over 10 per cent. were found to be affected in greater or less degree; while in the male wards the proportion did not exceed 3 per cent. It is a noteworthy fact that the deformity is comparatively rare in the period before puberty. I was able to find only three examples, and these of a very slight kind, among 800 children under the age of sixteen; while incipient hammer toes and hammer fingers were present in considerable numbers. This early immunity is probably due to the fact that the vanity which leads the adolescent to

sacrifice comfort to a false elegance has not awakened in the child. The more severe cases of hallux valgus in which the toe is so far everted as to form an angle of from 120° to 90° with the metatarsal bone are comparatively rare, the total number amongst 2,600 persons amounting to no more than thirty (twelve male and eighteen female). It is with these that we are especially concerned, and it is probable that they are closely related in origin to hallux flexus.

Morbid anatomy.—On examining a well-marked hallux valgus it is seen that the facetted surface of the head of the metatarsal bone has been extended considerably over the external aspect, the prominent inner side of the head lies beneath the stretched joint capsule, the sesamoid bones are displaced outwards from their normal grooves, the internal lateral ligament is greatly elongated and considerably thickened, the external ligament undergoes an inversely proportionate shortening and opposes the reposition of the displaced phalanx ; and the cartilage over the portion of the joint surface, removed from its normal contact with the opposed bones, presents marked degenerative changes. The integumentary structures over the projecting head of the metatarsal bone are affected in the same way as those over the angle of flexion in hammer toe, as a consequence of friction by contact with the shoe leather ; callosities and bursal formations, often of great size, are found, and inflammation of the abnormal bursa may give rise to great suffering.

Although the great majority of cases of hallux valgus are undoubtedly provoked by ill-shaped boots, it is very probable that some, and especially those of a very aggravated type, are, like hallux flexus and hammer toe, dependent essentially upon an irregularity of development, and unconnected with any vice in the foot covering. It is at least certain that some examples of extreme deformity are confined to one foot, the opposite member being of normal shape—a fact that strongly negatives the boot theory ; and there are also bilateral cases in which the form of the distortion and the history given by the patients and friends make it equally difficult to accept the common explanation. In one instance recently under my notice the first, second, and third toes of the left foot were carried outwards over the fourth, producing a deformity of a strongly marked kind, while the right foot was perfectly well formed, and the patient, an intelligent woman, insisted that "the toes went wrong by themselves while she was growing up," and that her shoes had nothing to do with it. If we accept the developmental theory with respect to hammer toe and hallux flexus, it would be remarkable if hallux valgus did not occasionally arise as a consequence of similar defects of nutrition.

Treatment.—Hallux valgus, like hammer toe, is often a question of æsthetics rather than one of pain or inconvenience, and the patients are only moved to see the surgeon by a natural desire to get rid of a deformity ; but in other cases the inflammatory complications in connection with the associated "bunion," or the interference with the neighbouring toes, upon whose territory the larger digit is encroaching, may give rise to actual and even intolerable suffering. In the milder examples the use of a well-shaped boot and a stocking made with a separate pocket for the great toe, as recommended by Mr. Ellis, will be sufficient to allow the rectification of the defect ; and to these elementary measures may be superadded, if necessary, the introduction into the boot of a curved piece of metal fixed to the sole, and passing around the outer side of the toe in such a manner as to draw it into its normal axis. In the more severe examples this treatment is insufficient, and we have, then, the choice of several measures. 1. Resection of the head of the metatarsal bone : This is a very severe operation in its remote, if not in its immediate, consequences, for the reasons already stated, and it can rarely be justifiable. It has, however, been recommended, and in some instances appears to have been successful, although it is probable that the report of the result was, perhaps, too early to be entirely trustworthy. In Hueter's case walking was found impossible a year after the excision, and it was necessary to remove the heads of all the other metatarsal bones to establish equilibrium. 2. Section of the neck of the metatarsal bone with the excision of a cuneiform segment from the inner side, to allow the articulation, together with the entire toe, to be restored to the normal line : This ingenious operation has been performed successfully by Mr. A. E. Barker. 3. Forcible rectification under an anæsthetic, aided, if necessary, by subcutaneous section of the external lateral ligament : The toe is fixed in plaster after the operation, and should the restoration fall short of completeness, as may sometimes happen, the line may be improved by subsequent applications of force and refixation. This has been successful in a case of my own, and I think the method is to be strongly recommended, as its failure would still leave the more severe procedures open as a final resource.

Lateral deviation of the lesser toes is frequent in childhood. It was found by Dr. Littlejohn and myself in 25 out of 800 children (12 males and 13 females), the ages of the subjects ranging between five and fourteen. The version is usually at the first inter-phalangeal joint, but may also be present in the distal joint, and the toe much more frequently diverges towards the tibial than towards the fibular side (six to one), and it may lie over or under its neighbour.—*The Lancet, August* 8, 1891, *p.* 280.

42.—ON THE EARLY STAGE OF DISEASE OF THE SPINE IN CHILDREN.

By Edmund Owen, F.R.C.S., Senior Surgeon to the Hospital for Sick Children, Great Ormond Street.

It is a simple matter on paper, but not always so in actual practice, to say whether a child has or has not early vertebral ostitis. Those who have seen most of spinal disease in children will be the least likely to dispute this statement. In a doubtful case the child should at once be placed flat in bed and kept flat until all equivocal symptoms have passed off. The lecturer had met with instances in which the practitioner, though suspecting the invasion of ostitis, had allowed the child to run about, because the existing symptoms were not sufficiently obvious to enable him to form a positive diagnosis. Attention was directed to two methods of examining for spinal caries which were as widely adopted as they were antiquated and unsatisfactory. The first was that of pressing upon the spinous processes from the nape of the neck downwards. The disease being in the body of the vertebræ, pressure upon the tip of the spinous process was hardly likely to give trustworthy information. Often, indeed, there was neither pain nor tenderness in the affected region. The second method is that of applying a hot sponge along the spine. Any child would be apt to wince under this test, even though its spine were healthy. On the other hand, if its spine did happen to be diseased it would by no means follow that the hot sponge would give information of that fact.

Before proceeding to examine the child, it is well to question the parents as to the complaints of aches or pains, and to notice how the child holds himself. Probably he will be standing unusually straight, with his head and shoulders somewhat thrown back in order to keep himself in a position of stable equilibrium, the centre of gravity having been advanced by the collapse of the softened vertebræ. As regards pain it may probably have been complained of in the back. But very possibly there may have been no complaint of that nature, the child having suffered only from peripheral neuralgias. These distant pains are usually symmetrical, and it is strange how the very terminal filaments of the sensory nerves are those chiefly concerned in it. Thus, in cervical caries there may be pains in each side of the neck; or, the third and fourth nerves being implicated, over the pectoral regions and shoulders. The lecturer then brought in a child, directing attention to its stiff and straight pose, and to the fact that it supported itself by holding on by his mother's dress. On being questioned, the mother said that the child's constant complaint was of "headache in the chest." Intercostal

pains which were carelessly ascribed to "pleurodynia"—whatever that was—or to "rheumatism," were often the result of vertebral disease. So also with "belly-aches," pains in the hips, thighs, legs and feet; in the arms, elbows, and hands.

After all, stiffness was the most important sign of early spinal disease. Two boys of about the same age were placed side by side upon the floor; one of them had dorsi lumbar disease whilst the other had a sound spine. The latter could put his head between his knees, his back assuming a beautiful, convex sweep. The other boy could not bend down at all. Two children were then brought in whose projecting spinous processes offered strong suggestion of vertebral caries. Their backbones could, however, be freely bent and turned in every direction, and were manifestly destitute of inflammatory trouble. Their mothers said, moreover, that they had not complained of pains, and that they could run about and play with other children without showing unusual fatigue.

[As regarded the treatment of the early stages of spinal disease, Mr. Owen summed up his advice in one word, REST—absolute and continuous rest. The child should be placed on a narrow horse-hair mattress with the head securely steadied between very large sand bags, only a small, flat cushion or pillow being allowed beneath the nape of the neck. When the pains had become a matter of almost "ancient history"; when it was certain that no abscess was forming, and when, with the lapse of many months, it might be considered that all tubercular inflammation—and these cases are always tubercular—had passed away, some kind of rigid support might be employed. To substitute a plaster of Paris or a poro-plastic splint, however, for absolute rest in the horizontal posture, was one of the commonest errors of the present time in connection with the treatment of early spinal disease.]—*Medical Press and Circular*, *May* 27, 1891, *p.* 530.

43.—ON THE TREATMENT OF DUPUYTREN'S CONTRACTIONS.

By WILLIAM ANDERSON, F.R.C.S., Hunterian Professor, Royal College of Surgeons.

Non-operative treatment.—There is no doubt that in the milder cases and when the morbid process has come to a standstill a considerable improvement may be effected by massage and persevering extension. I have seen in a patient of seventy the fourth and fifth fingers brought from an angle of 90° with the palm nearly to a straight line within a year, but the contraction relapsed completely in three months, when a severe illness made it necessary to suspend the treatment.

The *operative measures* may be divided into three classes—subcutaneous, open, and plastic.

The *subcutaneous method* deserves the first place. Mr. Adams, to whom we owe the establishment of the operation in the favour of surgeons, sums up its principles as follows :

"1.—The subcutaneous divisions of all the contracted bands of fascia which can be felt; the bands to be divided by several punctures with the smallest fascia knife passed under the skin and cutting from above downwards, a pledget of lint being at once placed over each puncture and retained in position by a strip of plaster. 2. Immediate extension to the full extent required for the complete straightening of the fingers when this is possible, and the application of a retentive, well-padded, metal splint from the wrist along the palm of the hand and fingers ; the fingers and hand to be bandaged to the splint. When the extension cannot be immediately made to the full extent, as in those cases where the second phalanx is sharply flexed upon the first, it must be carried as far as possible without producing pain or incurring the risk of tearing the skin." This plan I have followed, with slight and unimportant variations, but I have found it easier, after making the preliminary puncture (which should be longitudinal in direction to prevent gaping during the subsequent extension), to pass the knife beneath the band and to cut from within outwards, except in places where the deep surface of the skin is very tightly adherent. The sensation conveyed to the operator by the division of the round palmar cords is very similar to that experienced in tenotomy, and the effect of each section is immediate and encouraging. In some examples, however, the morbid tissue has become so firmly blended with the corium, especially over the proximal phalanx, that a satisfactory division is difficult, or even impossible ; and if the extension be carried too far ominous fissures begin to appear in the rigid integument. When this happens the surgeon, if wise, will be satisfied with whatever he has been able to achieve, without proceeding further at the time. The extension may be immediate or deferred. Where the skin has held good there is no reason why the fingers should not be put into position at once and fixed in place by a splint of plaster-of-Paris or other material ; but if it be evident that the integument at any point has been severely strained, it is desirable to wait for a few days before the parts are put on the stretch, and there is no reason to believe that the delay will be attended by any disadvantage. The operation may with benefit be preceded by careful washing of the hand and packing with a weak solution of perchloride of mercury solution or other antiseptic, and antiseptic dressings should be applied until the incisions are completely healed. The after-

treatment consists in the use of splints of various forms. The palmar splints of Mr. Adams are very convenient, but in the early periods plaster-of-Paris are equally satisfactory, and render the intervention of the instrument maker unnecessary. Whatever form be adopted it should be worn day and night for two or three weeks, and then be replaced by a well-moulded front splint of sheet iron, to be applied at night only, and kept in use for several months. The hand once set free during the day the patient is to be urged to practise friction with passive extension and active movements of the joint at every possible opportunity, and it is only by strict attention to these rules that permanency of the improvement can be ensured. In private practice the instructions are usually carried out with a good will, and hence relapses are exceptional. Mr. Adams and Mr. Macready estimate them as less than 10 per cent. But in hospital practice the case is different. The artizan has seldom much leisure or inclination for unpleasant manipulations for which, despite the assurances of the surgeon, he sees little immediate necessity, and he frequently allows the hand to drift into a condition which, if not worse, is at least little better than before.

The *open operations* may be placed under two separate headings—one in which the bands are merely divided in one or two places, and the other in which the morbid tissue is excised as far as possible. The first of these, however—the original method of Goyrand,—may now be held as superseded, since it has neither the safety of the subcutaneous method nor the thoroughness of the more radical measure. We need, therefore, only discuss the latter. The cutaneous incision may be either longitudinal and linear, as practised by Goyrand, Kocher, and others, or V- or Y-shaped, after the method of Busch, Madelung, and Richer. In any case the reflected skin should be very gently dealt with, and the wound carefully closed after the removal of the diseased bands. In most instances the simple linear incision gives all that is required, but the other varieties are useful when the distal end of the band branches or expands. The isosceles flap of Busch is made with the base opposite the metacarpo-phalangeal joint, the apex at the distal extremity of the hollow of the palm. When the hand is extended after section or excision of the contracted tissue the apex of the flap is drawn away from the angle of the incision, and the wound when closed assumes a Y-shape. A Y-incision, with the fork over the first phalanx and the stem corresponding to the palmar cord, is of advantage where the fibrous band spreads out broadly and becomes adherent to the skin beyond the metacarpo-phalangeal joint, the reflection of the angular flap beyond the fork allowing the safe removal of the diseased tissue. In any of these operations the anatomical relations of

the vessels and nerves should be carefully borne in mind. Fortunately the morbid tissue seldom encroaches upon the nerve tracts in such a way as to expose them to danger. The best rule for the surgeon is to confine his dissection as far as possible to the tissue overlying the axes of the flexor tendons, and not to make any further lateral excursion than is absolutely necessary, Extreme care, however, will always be needed in excising the cords which run towards the inter-digital web, as these lie directly over the nerves. The tendons are quite safe in the palmer incisions, as they lie much deeper than the fibrous cords, but the diseased tissue is closely related to the theca in the fingers. The after-treatment is similar to that recommended for the subcutaneous operation, but for obvious reasons the

FIG. 1.

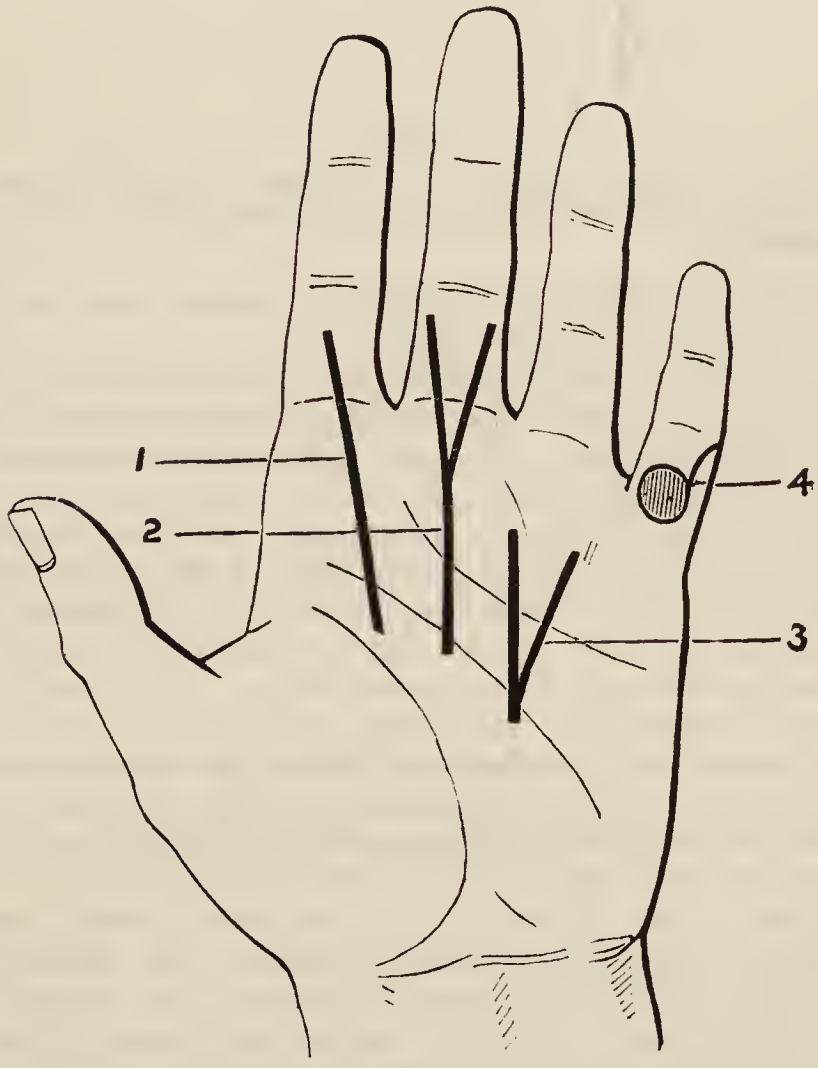


DIAGRAM SHOWING INCISIONS FOR OPEN AND SMALLER PLASTIC OPERATIONS.

1, Straight incision (Goyrand)). 2, Y-incision modified to allow excision of digital expansion of band. 3, V-incision of Busch. 4, Position of flap to fill gap left by section of contracted band and superjacent integument.

Section of Fig. 1.

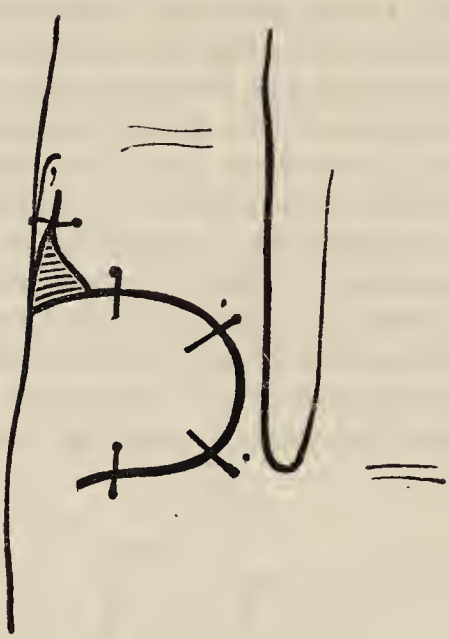


Diagram.

Showing lateral flap transplanted into gap left by division of the contracted band, with the superjacent integument at the level of the interdigital web.

necessity for antiseptic precautions is more vital in the open method. No drainage is required.

Plastic operations may be conducted under the same principles as those which guide the surgeon in the cicatricial contractions from burns or other causes. In two cases of contraction at the metacarpo-phalangeal joint, in which the skin was greatly involved, I have made a transverse incision through the integument and fibrous cord at the root of the finger and filled up the wide gap left on extending the joint by the transplantation of a flap from the side of the diget. The result was good and permanent in one case, of traumatic origin ; in the other, a true Dupuytren's contraction, the union and healing went on with ideal perfection, but the operation failed in consequence of the supervention of a gouty inflammation of the parts in the third week, after all the difficulties appeared to have been surmounted. The dissection of the flap must be carefully conducted in order to avoid injury to the digital nerve. In some cases it might be permissible to carry the plastic principle still further by the transplantation of a flap on the Tagliacotian principle from the chest or upper arm or any other convenient point. The details of the operation need not be described, as it has already been carried into practice in cases of cicatricial contraction, although it has not, I believe, been recommended in Dupuytren's disease.

Of these various procedures I believe that the best operation in all advanced cases is the subcutaneous plan of Mr. Adams.

It is speedy and safe, the immediate results are very satisfactory, the risks of relapse probably less than in the open method, and in the event of a recurrence the other lines of treatment still remain open. The excision operation involves a more extensive surgical injury, but under antiseptic precautions will usually do well. There is, however, a greater risk of casualties. It is perhaps most applicable to the slighter cases, in which the whole of the disease can be removed, but it may also be employed where the subcutaneous plan has failed. The plastic operations are most useful in the traumatic forms, and in those cases of true Dupuytren's contraction where the skin is so far involved that full or satisfactory extension is impossible. The little operation I have suggested produces an immediate result, and under ordinary circumstances a long after-treatment is unnecessary, because the flap of integument does not tend to contract. The larger operation can only be called for in very severe cases where all other measures have failed. It is not certain in any given example whether the surgeon will be successful in giving lasting relief to the patient. Were it simply a question of dividing or excising a common cicatricial band, there is no reason why the result of every well-devised operation should not be permanent ; but experience shows that even with the greatest care it is always difficult, and sometimes impossible, to prevent a return of the condition which gave rise to the deformity in the first place—that is, a growth of fibrous tissue which tends to contract, and occasionally this new formation may become diffused around the articulations in such a way as to impede both flexion and extension, and by leading to a kind of false ankylosis induces a more serious loss of function than that which existed before the intervention of the surgeon.—*The Lancet, July* 11, 1891, *p.* 58.

44.—ON HAMMER TOE.

By William Anderson, F.R.C.S., Hunterian Professor in the Royal College of Surgeons.

This complaint in its complete form may be described as a permanent flexion of not less than 30° from the straight line at either or both of the interphalangeal joints, without paralysis of muscles, unattended with any primary degenerative or inflammatory disease of the articular structures, and essentially confined in origin to the period of active growth. Some precision of definition is necessary to exclude similar deformities of wholly different pathological nature, as well as the lesser degrees of contraction which give rise to no inconvenience.

The deformity is found in both sexes, but is somewhat more frequent in the male (3 to 2). The influence of *age* is very strongly marked. The condition invariably begins within the developmental period, and may show itself at any time between birth and adult life, but most frequently attracts the notice of the patient for the first time during the third quinquennial period. Amongst a number of incipient cases seen at Hanwell not more than one-tenth were under twelve years of age, the little toe being usually the seat of the earlier manifestations. It is said to be occasionally congenital. So far as my own observations go neither class, occupation, nor constitutional condition appears to have any share in its production.

In surgical cases the toe most commonly affected is the second. In my list of forty patients who had applied for treatment, this digit was affected in thirty-seven, while the third, fourth, and fifth toes each afforded only a single example; but if all cases of contraction of the joint for 30° or more be counted without reference to symptoms, the condition is far more frequent in the little toe than in the others. Thus in an examination of a series of 800 children under sixteen years of age, the little toe was found to be involved in forty-one cases, nearly all of which were double, while the second toe was affected in six only, and the third toe in five.

The deformity is bilateral and symmetrical in nearly a third of the cases (13 in 40), in the rest having a slight preference for the right side, in the proportion of 5 to 4. It is usually localised in the first inter-phalangeal articulation (9 times in 10), but occasionally implicates both inter-phalangeal joints, or the distal joint only.

Symptoms.—The stages of the deformity in a typical case may be described as follows: In the *first* period, which is rarely seen by the surgeon, the toe is slightly extended at the metatarso-phalangeal articulation, and flexed at the proximal inter-phalangeal joint. By passive movement the flexed joint may be extended, although at the expense of some pain to the patient; but the range of motion, even in the early stage, is found to be less than that of the neighbouring or opposite toe. The distal joint is usually unaffected, and may be held straight or slightly flexed, but occasionally it undergoes contraction, either alone or in association with the proximal articulation. There is no evidence at this or any subsequent time of inflammation in or around the joint structures, except in association with corns or bursæ. How long this period may last it is difficult to say, as it may altogether escape the notice of the patient. In the *second* stage, the flexion of the inter-phalangeal joint becomes more pronounced, and the secondary extension at the metatarso-phalangeal joint increases *pari passu*.

At this period the affected articulation is fixed for all movement of extension, but the power of flexion within the limits left to it remains unimpaired ; in other words, the angle may be diminished, but not widened, and the toe, although contracted, is neither ankylosed nor paralysed. In exceptional instances the flexion may be overcome by strong passive force, and a distinct trigger-like action established, the middle phalanx becoming extended and flexed again with a movement very comparable to that which takes place during the opening and shutting of the blade of a pocket-knife. As secondary results of the contraction of the proximal inter-phalangeal joint the patient is subject to certain inconveniences which may give rise to much suffering, and are usually the immediate cause of his appeal to the surgeon. The chief of these are a bursal formation, which is very liable to inflammation, over the angle of flexion, and two associated callosities, one above the head of the retracted phalanx, the other beneath the head of the metatarsal bone, both consequent upon the pressure exercised by the boot. A third callosity may develop over the tip of the toe, and the soft parts over the terminal joint may become somewhat swollen, so that the digit presents a clubbed appearance. The degree of interference with functions and comfort varies greatly in different cases, partly in relation to the degree of the contraction and partly to the sensibility of the patient. In some persons a hammer toe of a marked kind will cause so little trouble that no medical advice is sought—this is especially the case when the contraction is limited to the little toe; in others, the suffering is so great that the patient begs the surgeon to remove the offending member with the knife, and remains absolutely crippled until an operation is practised for his relief. When the deformity affects more than a single digit, an interval varying from a few months to five or six years may elapse before the second attack appears. As a rule, it is the corresponding toe on the opposite foot that suffers, but occasionally a neighbour is selected ; or even, as in a case on my own list, the distal joint of the same toe.

A specimen prepared by myself in 1882 from a toe which had been amputated by a colleague showed that the deformity was not affected by section of the tendons, but that it yielded immediately upon division of the plantar fibres of the lateral ligaments where they blended with the glenoid plate. This observation, however, was not published until 1887, and it was by Mr. Shattock, who, working independently, had found the same lesion, that the condition was first made known at the Clinical Society in the same year. The beautiful preparation illustrating his paper is now in the Museum of St. Thomas's Hospital, as well as a second dissection demonstrating the

absence of disease in the interossei. The results of these and later investigations may now be stated.

1. There are no essential alterations of muscle or tendon except those secondary to the contraction of the joint—namely, an undue tension and prominence of the extensor over the metatarso-phalangeal articulation, and an adaptive deficiency of length in the flexors, which are prevented by the permanently bent state of the articulation from keeping pace in growth with the osseous structures. 2. The skin and fasciæ in like manner are unaffected, or only undergo a secondary shortening on the flexor side in severe and long-standing cases. 3. The articular surfaces generally show no change beyond atrophy of that portion of the cartilage of the head of the proximal bone, which is permanently excluded from contact with the distal bone in consequence of the imperfect range of extension of the joint. In some cases, however, a distinct transverse groove is present on the head of the proximal phalanx at the point where it comes in contact with the dorsal border of the base of the distal bone during the attempt at extension, and behind this groove the bone may be heaped up into a little ridge. It is the existence of this irregularity that explains the trigger phenomenon previously alluded to. 4. The ligaments present no structural change, but an important quantitative defect is always found in the plantar fibres of the lateral ligaments, which are so short that they check prematurely the movement of extension of the joint. This is the essence of the disease.

Hammer toe, like hammer finger, must be regarded as the result of insufficient longitudinal evolution of those fibres of the lateral ligaments which have for their functions the limitation of the movement of extension at the inter-phalangeal joints, and the symptoms induced by the deformity are mainly dependent upon the formation of callosities and bursæ by contact with the opposed hard surfaces of the foot covering. This irregularity of development may be either inherited or accidental.

Treatment.—It is probably not within our power to prevent the occurrence of hammer toe, but care in the selection of boots might lessen its frequency and severity. For its relief when developed many plans have been adopted, the chief of which are as follows :—1. Extension by splints of various kinds in the early stages, while the contraction may be overcome by passive force. The condition is, however, rarely seen by the surgeon in this period. 2. Tenotomy of the extensor tendon (Boyer). This measure, which was doubtless suggested by the visible tension of the tendon in many cases, is more likely to aggravate than to relieve the symptoms. 3. Tenotomy of the

flexor tendons. This, to be successful, must involve also the section of the glenoid and lateral ligaments. Such an operation has been practised both by the subcutaneous and by the open methods, but it involves the immediate though not very serious danger of division of the plantar digital vessels and nerves, and the necessity for a prolonged after-treatment to prevent recurrence. It has even been advised by Petersen to treat the contraction by a transverse incision, through integuments, tendons, and ligaments, down to the articulation, but the promptitude of the method is its only recommendation. 4. Subcutaneous division of the lateral ligaments. This operation has been performed with good results by Mr. Adams, but it has the disadvantage of requiring a long after-treatment. 5. Resection of the joint. This is unquestionably the most eligible measure, and has been successfully practised on different plans by various surgeons during the last twelve years or more in England and France. The articular extremities of both bones may be removed, or the head of the proximal bone only, the distal bone being left intact. In either case the toe is subsequently fixed for a period of three or four weeks in an extended position. The procedure I have found most speedy and satisfactory is as follows :—An incision is made on the lateral aspect of the affected articulation, following the axis of the bones, and exposing the lateral ligament, while leaving intact the vascular and nervous trunks. The ligament is then divided by a touch of the knife, and by a forcible lateral movement the head of the proximal phalanx is made to protrude through the wound, when it is removed with a pair of bone nippers. The toe is straightened, the wound closed by sutures (without drainage), and dressed. Antiseptic precautions must be strictly observed. The operation can be completed within two or three minutes, and, what is a far more important consideration, it involves the least possible interference with the structures of the toe. The wound heals by first intention, and after a fortnight's rest the patient is able to walk, the toe being extended for a few weeks upon a dorsal splint of flat steel, such as was used in making the now obsolete appendages to the back of the feminine skirt. The result is all that could be desired, and the relief immediate and permanent. 6. Amputation was, until within the last ten or twelve years, the usual resource after the failure of tenotomy of the extensor. It affords a curious comment upon the surgery of the pre-antiseptic period that the chief reason given against this operation by the early writers was its danger to life. At the present time it can rarely be needed unless, by any accident, the antisepsis of the resection operation fails, and acute inflammation sets in.—*The Lancet, August* 1, 1891, *p.* 214.

45.—THE SYMPTOMS AND ANATOMY OF DUPUYTREN'S CONTRACTION.

By William Anderson, F.R.C.S., Hunterian Professor in the Royal College of Surgeons.

[The following excerpt is taken from Mr Anderson's first lecture on Contractions of the Fingers and Toes.]

Before entering into the symptomatology of Dupuytren's contraction, I ought to premise that there are to be distinguished two forms of the so-called contraction of the palmar fascia : one in which the condition occurs independently of any definite traumatism, and tends to multiplicity of lesion, the other appearing as a result of an ordinary wound, and confined to the parts in direct relation to the injury. The first of these I propose to speak of as true Dupuytren's contraction, or the specific form ; the second as false or traumatic contraction. The characteristics of the latter will be referred to later.

The symptoms of the specific form have been so often and so graphically described that little can be added to the current accounts. In a typical case, a middle-aged or elderly man notices in the palm in the course of the distal furrow, opposite the ring or little finger, a small nodule, or perhaps only a puckering and exaggeration of the flexion line. By-and-bye a ridge appears running proximally from this point towards the wrist and in the distal direction along the central axis of the finger. The ridge is prominent, round, and very hard, especially between the flexion fold and the root of the digit, and the skin is usually drawn to it tightly at the seat of the initial sign. It passes on to the front of the first phalanx, nearly always preserving the central position, but spreading out and usually sending processes to the deep surface of the integument as it reaches the first joint of the finger, and, as it contracts, draws down the metacarpal phalanx towards the palm. After a while the second phalanx may become bent in like manner, and by exception even the distal bone. The articular structures show no trace of disease, the tendons are normal, the finger retains all its strength within the progressively narrowing range of motion left to it by the disease, and the utility of the hand may for a long while be little impaired. Sooner or later other fingers may become involved, and the affection may appear in the opposite hand, to follow a like course. The process of contraction is slow in progress, perhaps extending over ten or twenty years ; it is painless, and is uncomplicated by any signs of active inflammation. At length, after a more or less protracted period, it may terminate spontaneously in any of its stages, but the mischief wrought is permanent, and, unless the surgeon intervenes, the patient carries it to his grave.

This is the more ordinary course, but the signs show great variety in different cases. 1. The disease may remain limited to the palm, not giving rise to flexion of the finger ; this is especially frequent in women. 2. Any or all of the fingers may be attacked, and the rigid bands may implicate also the thenar and hypothenar eminences. 3. Either or both inter-phalangeal joints may become flexed, while the meta-carpo-phalangeal joint remains free. 4. The palmar cord may remain single and central, or it may send off a lateral branch on either or both sides in the inter-digital web, and so implicate two or three fingers. 5. A central band, after reaching the root of the finger, may bifurcate, sending a branch to either side of the digit ; this is, in my experience, the least common variety. 6. The cord, instead of running along the central axis of the finger, may pass towards the inter-digital cleft and then divide, giving branches to two digits ; a band of this kind would be in dangerous relation to the digital vessels and nerves in the event of operation by excision.

Age.—Dupuytren's contraction is almost essentially a disease of middle or later life. It was estimated by Dr. Keen that about five-sixths of the cases began after the age of thirty, but his examples included some of the traumatic form, which may of course originate at any period of life. In my own series only one, a man of thirty-two, was below the age of forty when the disease first appeared, and in the number seen in hospital practice before I began to keep notes of the cases, I do not recollect one in which the symptoms began in youth or early adult life.

Constitutional condition.—If a generalisation would be permissible solely upon the cases in my own list, I should be inclined to think that the patients were rather above than below the average in health. Twenty-six out of the thirty-nine had passed threescore and ten when they came under my notice, and, with four exceptions, all were in good physical condition, and one (a woman with fairly well-marked contraction in both hands) had reached the span of ninety-three years. In each case careful inquiries were made with reference to the inheritance or past or present existence of gout, rheumatism, and rheumatoid arthritis, and the result, confirmed as far as possible by direct examination of the patients, was altogether contrary to my preconceived notions on the subject. Of the whole number, only one had suffered from gout, one from rheumatic fever, three from rheumatoid arthritis (all in women whose Dupuytren's disease was limited to slight palmar lesion), and six from mild subacute or chronic rheumatism. A possible gouty inheritance was traced in three cases. All were free from nervous disorders except two of the women, who were

subject to neuralgias of an ordinary kind, and one (aged seventy-three) with a double contraction of thirty years' standing, who was suffering from hemiplegia of three years' duration. No complaint as to the digestive functions was made in any case.

Morbid anatomy.—It has long been a subject of dispute whether the complaint is or is not a contraction of the palmar fascia. There is of course no doubt that the palmar fascia is always implicated to some extent, but its exact relation to the morbid tissue that constitutes the essence of Dupuytren's disease can only be decided by a consideration of the anatomy of the health structure. It is perhaps not easy to say what is meant by the expression "palmar fascia," since the text-books are by no means agreed upon the point. We have really to notice four palmar structures which may claim a share in the title. These are (1) the radiating fascia, spreading towards the fingers from the palmaris longus and annular ligament ; (2) the aponeuroses, investing the muscles of the thumb and fingers ; (3) a delicate connective tissue, blending with 1 and 2, and forming sheaths for the flexor tendons, the lumbricales, and the digital vessels and nerves ; (4) the fascia of Gerdy, which runs transversely across the bases of the second, third, fourth, and fifth fingers and in the interdigital webs, and is continuous with the superficial fascia of the digits and dorsal surface of the hand. Lastly, in addition to these, we might regard the ligumenta vaginalia and the transverse ligaments connecting the metacarpo-phalangeal articulations as specialisations of the family.

If we examine a case of Dupuytren's contraction in the light of our anatomical knowledge, we shall be struck by the circumstance that the morbid structure which causes the permanent flexion of the fingers bears no resemblance in position or character to the normal fibrous tissues of the part, although it is apparently continuous in the proximal direction with the digital bands of the radiating fascia. The band is well developed beyond the point where the radiating fascia normally ceases, and maintains its longitudinal fibrillation while crossing the vaginal fascia and the transverse fibres of Gerdy. The varieties and modes of branching already described are only to a limited extent related to the anatomical arrangements—that is, where the morbid tissue spreads proximally over the radiating fascia, and sends lateral branches along the course of Gerdy's fibres ; but it is certain that the tendon-like cords are of entirely new formation, and that they exist at the expense of the normal structures. The firmest point of integumental adhesion is opposite the distal flexion fold over the head of the fifth metacarpal bone. The first phalanx is flexed to about 90°, and over the metacarpo-phalangeal joint

the contracted cord lies in a plane considerably anterior to the tendons, vessels, and nerves, which maintain their normal relation to the bones and muscles. There is no tendency on the part of the morbid growth to follow the deep connections of the fascia in the palm. The radiating fascia, and perhaps even the tendon of the palmaris longus, are made tense and prominent by the shrinking of the new material, but the palmaris longus has no primary share in the production of the deformity, and in fact the disease may be present where the muscle is undeveloped. Repeated experience in operations has proved that the flexor tendons are not affected, and that even in long-standing cases the joints may be fully extended immediately after the division of the morbid fibrous bands. It may be accepted as a principle that, the development of a tendon once completed, the tissue has little or no disposition to retrograde changes in the direction of its length. When the most prominent parts of the contracted cords are exposed for excision they bear much resemblance to tendon in contour and striation, but they are less bluish and lustrous in aspect. On dissecting them away from the radiating fascia the transverse fibres interlocking the digital segments of the latter may often be seen unchanged, and in one case in which the disease had attacked the sole the new fibrous tissue could easily be detached from the fascial fibres, which retained all their lustre. The histological appearances of the new growth are those of fibrous tissue. If the disease is spreading, the fibrous strands are intermingled with nuclear proliferation, which extends especially along the course of the vessels.—*The Lancet*, *July* 4, 1891, *p.* 1.

ALIMENTARY CANAL.

46.—ON THE TREATMENT OF ADENOID DISEASE OF THE NASO-PHARYNX.

By E. Fletcher Ingals, M.D., Professor of Laryngology in the Rush Medical College, Chicago.

[Dr. Ingals concludes an interesting paper on "Hypertrophy of the Pharyngeal Tonsil," with the following remarks upon its treatment :]

Of internal remedies I have occasionally found the syrup of the iodide of iron of value, particularly in anæmic children. Other preparations of the iodides will doubtless prove beneficial in a few cases, and the chloride of calcium might cause some reduction of the gland in other instances ; but, as a rule,

medicinal treatment is of no value. Locally, astringents have been recommended, and seem to be useful in a few cases.

The most satisfactory results follow the removal of the gland by surgical measures. In a few cases in which the friends have objected to an operation, I have employed chromic acid successfully. In using this caustic I fuse a few crystals on the end of a flat aluminum probe, and pass this through the nostril to the enlarged pharyngeal tonsil, where it is held for two or three seconds. The nares must be previously oiled to prevent the contact of any of the acid with the mucous membrane, and a small amount of cocaine may be applied to the nares and naso-pharynx in the form of either powder or spray. Applied in this way the acid usually causes a moderate amount of pain at the time and some soreness for several hours afterward, but the pain is not severe. The applications may be repeated at intervals of from three to five days, being made alternately through the opposite nostrils. The galvano-cautery may be used by means of a bent electrode passed up behind the palate, or a straight one through the naris, but the method is painful, tedious, and not very satisfactory. Scraping of the gland by means of a long finger-nail, or by various forms of curettes is in favour with some operators, and may in certain cases serve an excellent purpose ; but usually the operation is less complete than when performed by Loewenberg's forceps, and, therefore, recurrence is more likely to take place. Ecrasement by means of a bent snare has been practised satisfactorily in some cases in which the growth was very soft. Some operators prefer scissor- or punch-like forceps, but both are open to objections and do not seem to me to compare with the Loewenberg forceps. The scissor-like instruments which I have seen may be satisfactory for cutting out a soft portion of the mass, but they are not well adapted to a complete extirpation of the growth, and other instruments will generally have to be used if the diseased mass is completely removed. The punch-like forceps are not open to this objection, but it is claimed that much more bleeding results from their use than from the instrument about to be described. By far the most satisfactory instrument for the operation is Loewenberg's forceps, or some of its modifications. The modification of this instrument, suggested by John N. Mackenzie, of Baltimore, has proved most satisfactory to me, though I have had made a similar instrument with shorter blades for operating upon young children ; these two answer the purpose perfectly.

In performing this operation upon adults it is often sufficient to unæsthetise the parts by cocaine, which may be applied by an atomiser, syringe, or swab, or by means of a hypodermic syringe with a bent needle, by which it may be injected directly

into the gland. My own custom has been to apply a ten-per-cent. solution as a spray behind the palate, and a similar solution by means of a syringe with a long nozzle to the upper part of the gland through the nares.

The application should be repeated about once a minute until the part is anæsthetised, or in about ten minutes. A self-retaining palate retractor should then be inserted, and the patient may depress his tongue with a depressor. The forceps are then inserted with the aid of a rhinoscopic mirror, and thus one or two bites may be made accurately, but subsequently the blood obstructs the view and the remainder of the operation may be postponed to another sitting, or completed by the sense of touch if the patient will permit. Usually, even with cocaine, after two or three bites have been made, patients prefer to postpone the remainder of the operation. Two or three sittings, however, will be sufficient in the majority of cases. When an anæsthetic is objected to, either in adults or children, if the gland is soft, and if for any reason a perfect operation will not be permitted, a single large bite should be made as it will give very great relief. In children chloroform or ether should be administered, chloroform being preferable. When anæthesia is complete the child should be turned upon its abdomen and face, with its mouth over the side of the table, and a gag should be inserted to hold the teeth apart. Henrotin's gag is the simplest one for this purpose which I have seen, but sometimes Goodwille's will be found preferable, especially in large children. The surgeon, standing at the right side of the table and facing the patient's head, passes the index finger of his left hand behind the palate into the naso-pharynx, where it is retained as a guide to the forceps. The forceps are then passed along the dorsal aspect of the finger and accurately applied to the growth. Thus the gland is removed piece by piece, the forceps being guided each time by the finger until every part has been extirpated. Care should be taken to avoid seizing the posterior edge of the vomer or the ends of the Eustachian tubes. The latter often seem to the uneducated finger like abnormal growths. If care is taken not to turn the forceps sideways there is no danger of doing damage, providing the operator is familiar with the normal condition of the parts. Sometimes masses are situated just back of the Eustachian orifices and are liable to be overlooked, but the most common difficulty arises from small pendant masses which hang just back of the choanæ and are liable to be crowded forward into the posterior nares. It is sometimes quite difficult to get the finger in front of these in order to push them back where they may be caught with the forceps. Some operators attempt to scrape them away with the finger-nail, but the effort can be only partly successful. When

I find difficulty in removing this part with the post-nasal forceps, I employ a straight nasal forceps with cutting edges, which I pass through the nostril and guide to the proper point in the vault of the pharynx with my finger, which is still retained behind the palate. In this manner a piece which might otherwise be difficult to catch is very readily removed.

With the patient in the position that I have recommended there is no necessity for care in swabbing out the throat, as the blood cannot run *up* the trachea. With the patient on his back and the head thrown far backward, as recommended by some English surgeons, it is necessary to swab out the throat and naso-pharynx frequently in order to prevent blood from getting into the air-passages. There is usually considerable bleeding, but this stops as soon as the operation is completed. However, if undue hemorrhage should occur, the posterior nares may be packed in the usual way, or, as I prefer, with a long strip of gauze which is saturated with a thick solution of tannic and gallic acids, such as I have recommended for checking nasal hemorrhage. This should be pushed back through the naris and packed up behind the palate with the finger, which is inserted through the mouth. The nares should also be packed and the gauze brought forward to the nostril, to prevent the packing from falling down into the throat. If it should become necessary to plug the naso-pharynx, the packing should be removed from within twelve to twenty-four hours.

When the operation is completed the mouth should be wiped out and the nostril squeezed to press out as much blood as possible, but it is neither necessary nor desirable to wash out the parts. The patient should then be placed in bed and the friends directed to keep him as much as possible upon the face till he has thoroughly recovered from the chloroform. He should be kept in bed for a few hours, and in the house for from two days to a week, according to the weather. During this time I usually direct that insufflations be made, two or three times during the day, of a powder composed of 2 per cent. of cocaine, 50 per cent. of iodol, and 48 per cent. of sugar of milk. A simple detergent alkaline spray is not objectionable, but washes should be avoided for fear of injuring the middle ear ; even sprays will sometimes find their way up the Eustachian tubes, and, therefore, unless, judging from the odour, there seems to be a special indication for them, I prefer to use simply the powder.

As the result of the operation there is usually a little soreness of the parts for a day or two, but not sufficient to interfere much with swallowing. There is sometimes a slight elevation of temperature. The improvement in breathing is marked and immediate in many cases ; very often the friends become

alarmed during the first night, because the child breathes so quietly. In cases with deafness, considerable improvement or a cure of this symptom may be expected within a few days or weeks, but alterations of the voice are less rapidly recovered from. Some danger of otitis media exists from the liability of blood or other fluids to pass into the Eustachian tube, but thus far no permanent bad results have come from it in my experience. If the accident occurs, continuous use of hot water in the ear, or hot water with glycerin and opium, and dry heat externally, are the best remedies that can be employed. In some cases nasal obstruction will be found to persist, and it must subsequently receive appropriate treatment.

The results of this operation are the most satisfactory of any that I have seen in the domain of special surgery. In cases in which the operation is needed—and in no others should it be recommended—the patient's general condition undergoes a revolution for the better which often astonishes the physician, and gives the friends most unbounded satisfaction. It is not unusual for a child of from three to six years of age to gain from twenty per cent. to twenty-five per cent. in weight within five or six months after the removal of the gland. I have never seen ill results follow the operation, and think it safe to tell the friends that when properly done it is no more dangerous than is the removal of a finger.—*Medical News, March* 21, 1891, *p.* 329.

47.—THE RESULTS OF ENTIRE EXCISION OF THE TONGUE FOR CANCER.

By Walter Whitehead, F.R.C.S., Senior Surgeon to the Manchester Royal Infirmary.

During the last twenty years my operations upon the tongue for cancer amount to 139 cases. I find that out of these 139 cases, of which I have a record, there have been 119 recoveries and 20 deaths, which gives a mortality of 14·3 per cent. As the main object of my communication, however, is to place before the profession an accurate and reliable record of my personal experience in excision of the entire tongue with scissors, I shall discard, in the first place, ten of the successful cases, as they were operated upon with the galvanic écraseur. I shall also exclude twenty-five successful partial excisions, for although the excisions were performed with scissors, I am anxious to adopt a definite standard by which the merits of the operation may be duly estimated, and more easily contrasted with the results of other methods of operating for the same object. Hitherto it has been the custom to place the results

of total and partial excision in parallel columns, ignoring the palpable fact that the risks and difficulties in the two instances are certainly not identical. Where the disease has advanced beyond the tissues of the tongue the operation is also much more severe, and attended with much greater danger. By this arrangement I reduce the number of my total excisions to 104, with a mortality of twenty, or a percentage of 19·21, against 14·3 in the gross number of my cases. In estimating these results it has been thought desirable to draw a clear distinction between cases in which the tongue alone was excised, those in which the tongue was removed together with the glands, and those in which division or removal of portions of the jaw was an additional part of the operation. Unquestionably, the risks and dangers of these different operations are not the same, and it is misleading and unjust to classify them together. Taking my own cases as an example, in excision of the tongue alone the death-rate is only 4·5 per cent., compared with 77 and 57 per cent. respectively when glands and jaw have been involved.

I cannot better illustrate the misleading influence of grouping together all these different and distinct operations than by referring to the statistics published by Mr. Butlin in his work on Diseases of the Tongue. Mr. Butlin stated, which is perfectly true, that I supplied him with my statistics of tongue excisions in 1884, and they represent 48 cases with 9 deaths, but although the entire tongue was excised in every case, there was nothing to show or explain how much more than the tongue was removed. On referring to these cases, I find that in only two was the operation confined to excision of the tongue alone; in every other case it was complicated with either the removal of glands, portions of the jaw, or some other addition to simple excision. To show more clearly how valueless statistics compiled on this basis must be, Mr. Butlin contrasted the results of my excisions with those of Mr. Baker, who classifies amongst his returns cases in which a portion only of the tongue had been removed. If we may be guided by the tables I produce, it may be roughly estimated that the mortality from simple excision of the tongue amounts to only a point over 4 per cent.; for they clearly show that 66 patients may lose their tongues with a possible loss of 3. Now, I consider that I am entitled to draw marked attention to the particulars of these three patients who died. In the first place, the youngest was fifty-six and the oldest seventy, and the average age of the three sixty-four. One was a man with advanced phthisis, who died on the second day from the rupture of a pulmonary abscess; another died on the twelfth day from syncope, after the floor of the mouth had completely healed; and the third was a woman seventy years of age, who died

on the fourteenth day from inanition. When we take into consideration the ages and causes of death in these cases, I think that these tables very effectually show what a slight risk there is in excising the tongue when the operation is not complicated by the removal of contiguous structures.

When we come to consider what we can fairly and reasonably claim to be gained by excising the tongue, we have two questions to answer, Does excision prolong life? Or, failing this, does it render the remainder of his life more endurable to the patient? From my own experience, I can bear the strongest and most emphatic testimony that in the majority of cases excision gives very great relief; and in support of this I could produce numerous letters I have received from patients, and preserved for the purpose of answering this question. As to the prolongation of life, it is only necessary to turn to the statistics I produce, when it will be clearly seen what proportion of patients lived beyond the ordinary tenure of life after the advent of malignant disease of the tongue. It has been shown that twenty-six patients out of the eighty-four successful cases were traced, and found to have lived a year and upwards after excision; and I think that we are reasonably entitled to add to this number a certain percentage of the forty-one of whose fate nothing could be ascertained, and not to take it for granted that in every instance the patients had succumbed. Although cases unsuited for operation, and those where the disease has recurred after removal, are not exactly within the scope of my communication, I cannot avoid taking advantage of this opportunity to make a few remarks upon this much-neglected subject. We have it on good authority that in cancer of the tongue death generally takes place before dissemination has extended beyond the limits of the cervical glands—that, in fact, up to the very end the extent of the disease is within the range of eradication. Surgeons not unreasonably feel deterred from operating by the contemplation of the important vessels and nerves occupying the region traversed by the lymphatics, and it is no matter of surprise that so few efforts are ever made when the glands in the neck are invaded. In addition to this, patients have usually been reduced to such a degree of emaciation that by the time the glands are affected the prospects of recovery are very discouraging. If attempts are never made to follow the disease to its utmost limits, the possibilities of surgery can never be ascertained. I have on several occasions in desperate cases, and in response to the wishes of patients, cleared out the anterior triangle of the neck, and in two instances excised a portion of the common carotid artery, with, however, fatal results in both cases. This experience is naturally disappointing; nevertheless I have not

altogether abandoned the idea that I may yet meet with more common results. In fact, I have recently operated upon a gentleman brought to me by Dr. Vaudrey of Derby, which has stimulated my hopes. The patient had his tongue excised in May last under most unfavourable circumstances, there being at the time extensive gland infiltration. The operation temporarily fulfilled the purpose for which it was performed, and relieved him from a foul mass of sloughing tissue within the mouth. He received so much benefit that he afterwards consented to have the glands removed, and this was partially carried out by another surgeon. The wound rapidly healed, but his sufferings were not entirely relieved by what had been done. At the request of Dr. Vaudrey I again saw the patient, and proposed as a means of relief that I should attempt to remove the tension, which was apparently the origin of the pain. With this object I removed the sterno-mastoid muscle from its origin to its insertion, and cleared out large quantities of diseased glands, and it appeared possible to have removed every visible particle had it not been found that the œsophagus was too extensively implicated to justify any further proceedings. During the course of the operation the external and internal jugular veins had to be sacrificed, and the full extent of the carotid sheath exposed. The patient recovered from the operation, and lived absolutely free from pain for several months. It is an interesting fact, and worth mentioning, that the loss of his sterno-mastoid did not appear to occasion him the slightest inconvenience or in any degree interfere with the movements of his neck.

Tables which I have prepared show that out of 104 cases a history of cancer in the family was only obtained in six cases. A definite history of syphilis was obtained in seven, and a doubtful account in another seven cases. In sixteen patients the origin of the cancer was attributed to an injury. Sixty-one out of the 104 were ascertained to be smokers, and in the majority of these the cancer commenced on that side of the tongue on which the pipe was usually smoked. In thirty-three cases the irritation of teeth is recorded as being the exciting cause of the disease. In marked contrast to these cases one man had never smoked in his life, and had not possessed a tooth for twenty years. The difficulties of ascertaining the duration of life after operation are very great. Patients, especially hospital cases, rarely remain for any length of time in the same house, or even in the same locality. Mr. Wilson has succeeded in obtaining positive evidence in sixty-one cases; fifteen patients survived the operation one year; four, two years; two, three years; four, five years; and one, six years; and I may incidentally mention that the patient whose case I published in

1880 lived fourteen years, notwithstanding the fact that she was sixty-two years of age at the time of operation. If we believe that cancer of the tongue can be permanently cured by early excision, and that there are no other effectual means of eradicating the disease, we cannot too persistently urge these convictions upon those who have the earliest opportunity of detecting it, with the object of inducing them to adopt prompt measures and give the patients the only possible opportunity of having their lives saved. It cannot be too frequently reiterated that the loss of time in the interval between the discovery of the disease and its removal by operation bears a direct ratio to the death-rate, and, conversely, that the earliest excisions give the most favourable results. The sooner patients can be made to realise how insignificant is the loss of their tongue compared with the loss of life, and that they have to weigh the two in the same balance, the quicker they will be to decide in favour of operation. This resolution will be taken with less reluctance when they are assured that the risks from excision are comparatively slight, and also that the inconveniences of being without a tongue are of small moment, as this organ is neither essential to speech nor to the sense of taste.—*The Lancet*, *May* 9, 1891, *p.* 1032.

[See also following article, by Mr. Whitehead, on Excision of the Tongue.]

48.—ON EXCISION OF THE TONGUE.

By Walter Whitehead, F.R.C.S., Senior Surgeon to the Manchester Royal Infirmary.

When once it has been decided to remove a patient's tongue, the sooner it can be done the better; at the same time it may be occasionally judicious, especially with those who are in a state of feeble health, to sacrifice a few days for the purpose of generous feeding, and more especially to obtain a cleanly condition of the mouth. With such patients digestion is often deranged, the bowels loaded, the skin inactive, the teeth foul and coated—all influences which have a tendency to lessen the chances of recovery. For an anæsthetic I recommend the use of chloroform, although I know of no objection to ether, which I think has an advantage in feeble subjects. The important point is to obtain deep anæsthesia before commencing the operation. The effectual gagging of the mouth is a point of great importance, for on the one hand it is necessary to keep the mouth wide open, whereas on the other we must avoid so pressing back the jaw as to embarrass the respiration. In fact the aim in gagging the mouth should be to place the jaw, as it were, in the position it occupies

in semiluxation forwards. As much depends upon the position of the patient during the operation, I hope I may be excused if I dwell rather fully upon a detail which I have found by experience to afford the greatest convenience to the operator. In the first place, the patient's head must be neither too high nor too low ; the mouth ought to be, roughly speaking, on a level with the surgeon's axilla. The head should be firmly held erect with a slight inclination forwards, in such a position that the light will fall well into the mouth. It is, of course, always desirable to take advantage of the best obtainable light. Great inconvenience is generally caused by the persistent tendency of the patient to slip down on the operating table, and the best means to prevent this is for the patient to recline on an almost perpendicular back-rest, with the thighs bent at a right angle over the elevated central portion of an ordinary operating table. In private practice any joiner will readily improvise a substitute for this arrangement. A sand-bag makes a very convenient support for the head. The ligature passed through the anterior portion of the tongue is a great aid throughout the operation, and much depends upon the dexterity of the assistant in anticipating the intentions of the operator, and in always making traction in exactly the right direction, his aim being to make tense those tissues which are immediately to be divided.

The first step in the actual operation consists in the separation of the tongue from its attachment to the floor of the mouth and the anterior pillars of the fauces, and I would lay stress upon the way in which this is done, because the ease with which the operation is continued depends largely upon the freedom with which this separation is carried out. The two structures principally responsible for the retention of the tongue within the mouth are the frænum and the anterior pillars of the fauces, and if these are completely divided in the first instance the tongue may be so freely drawn from the mouth that the operation is practically converted into an extra-oral excision. Extended practice has made me conduct this part of the operation with less deliberation and more rapidity than was my habit in my earlier cases. Instead of the cautious snipping I originally advocated, I now boldly cut until I get close to the vicinity of the main arteries, disregarding all bleeding, unless an artery distinctly spurts, when I twist it and proceed. The more profuse the general oozing the more rapidly I proceed, my object being to get as quickly as possible to the main arteries, as I have confidence that all subsidiary bleeding will cease immediately after their division. There is, in reality, no difficulty in determining the actual position of the lingual arteries, as they are practically invariably found in the same situation, and it requires very little experience to seize them with a pair of

forceps before dividing them. If this be done there need not be the slightest hemorrhage from this source. When once the vessels are effectually twisted the rest of the tongue may be removed without any further anxiety about hemorrhage ; but it is desirable, before finally severing the last attachments, to pass a loop of silk through the glosso-epiglottidean fold, as a provisional measure of security, in case it may become necessary to make traction on the posterior floor of the mouth, either to assist respiration or to arrest any possible consecutive hemorrhage. Traction on this ligature of itself arrests hemorrhage, and makes it an easy matter to secure any bleeding vessel. As the retention of this ligature is a source of some annoyance to the patient, I always remove it at the end of twenty-four hours. As a matter of fact, I cannot recollect its having been required in more than two cases, and but for the certain sense of confidence it gives to those who are left in charge of the patient I should dispense with the precaution altogether, were I influenced solely by the amount of benefit I have derived from its use.

The treatment of the floor of the mouth after the tongue has been removed is a matter of considerable moment. The first object is to make the cut tissues as far as possible aseptic, and for this purpose I am still in the habit of swabbing the parts with a mercurial solution, and, after drying, finally painting the surface with the iodoform styptic varnish which I introduced in 1881. This preparation, in addition to its antiseptic properties, has the advantage of lessening the discomfort which follows when the surface is left unprotected, and it also enables the patient to take food in the ordinary manner almost immediately after the operation. The mercurial solution I prefer is that of the biniodide, and the strength I am in the habit of using is 1 in 1,000. I have recently made, and I think with advantage, a slight addition to the iodoform varnish. My original custom was simply to substitute for the spirit ordinarily used in the preparation of Friar's balsam a saturated ethereal solution of iodoform, but now I prefer to mix with the ether one volume in ten of turpentine. This addition has a very marked influence in promptly checking the capillary oozing, which occasionally prevents a dry surface being quickly secured.

I was at one time in favour of suspending all alimentation by the mouth for the first four days, and feeding the patient entirely by nutritive enemata ; but for some years I have entirely abandoned this practice, and I now feed the patient with liquids by the mouth as freely and as early as possible, only using enemata when it is necessary to supplement the amount of food the patient is otherwise able to take ; and I find that if a coat of the varnish is applied daily, patients rarely have any difficulty in taking an adequate amount of sustenance.

It fortunately happens that the patients appreciate rather than object to the application of the varnish, and they will often ask for its use more frequently than once a day. Instead of keeping the patients in bed and recumbent, my aim is to make them sit up from the first, and in fine weather I encourage them to walk out, if there be sunshine, the day after the operation ; and I have never seen any ill consequences, but great advantage follows the adoption of this plan. There is certainly no worse practice than keeping the patients lying on their backs in bed, and I am sure that I have seen the evil consequences of doing so in several of my earlier cases. Under the above treatment the average time of convalescence is about seven days, and in uncomplicated cases no patient need be detained in hospital after this time.

It is only reasonable that I should state the grounds upon which I prefer excision of the tongue with scissors to its removal by the galvanic or any other form of écraseur. In the first place, I consider that it is more in conformity with the elementary principles of surgery to make use of a sharp-cutting instrument, it being desirable to leave a clean surface—a surface which, it must be acknowledged, is in the best condition for healing. To employ an instrument whose purpose is effected by bruising leaves a surface in the very condition we are most anxious to avoid in the ordinary practice of aseptic surgery. The wound, in fact, left after the use of the écraseur embodies every condition calculated to engender those putrefactive changes which it should be our primary aim to avoid. I fail to see any special danger in the operation of excising the tongue which can justify such a departure from surgical practice, and I cannot recognise any good reason why we should employ an instrument for excising the tongue which no surgeon would at the present day ever think of making use of in any other region of the body—an instrument which almost every surgeon of eminence in the past has made a point of condemning. With scissors absolute precision can be obtained, whereas the erratic course of the écraseur wire is absolutely beyond the control of the operator. I am fully alive to the dangers which may result from blood gaining access to the lungs, even in small quantities, in patients with bankrupt constitutions ; and although I am aware that some surgeons advocate a preliminary laryngotomy or tracheotomy, I believe that it is possible to guard against this danger by measures attended with much less risk than those incidental to either laryngotomy or tracheotomy. At any rate, my own cases conclusively show that better results can be obtained without than with these preliminary measures. It unfortunately happens that it is precisely in those cases in which the danger from blood getting into the air passages is the greatest ; the risks incurred in opening the trachea are also

at a maximum. In one of my own cases, in which I performed laryngotomy on the day previously to that fixed for excision of the tongue, the patient died during the night in consequence of the first operation. If the head of the patient is properly arranged during the operation, and if the tongue has been thoroughly detached as recommended, when the arteries are divided the blood, unless the precaution has been taken to secure the vessels beforehand, will spurt directly out of the mouth, without any disposition to flow backwards. We must also bear in mind that the entrance of blood into the air passages is only one, and not the most important, determining factor in the causation of septic lung mischief. Patients suffering from cancer of the tongue with putrid discharges not unfrequently die from septic pneumonia apart from any operation or the entrance of any blood into the air-cells, and, further, under an anæsthetic, large quantities of blood frequently finds its way into the trachea during the extraction of teeth ; but how rarely do we meet with instances of septic pneumonia from such a cause. The skill with which the administration of the anæsthetic is conducted is also largely responsible for the amount of blood which may enter the trachea. For instance, as I have just stated, whilst it is desirable to have the patient thoroughly under the anæsthetic at the commencement of the operation, it is a mistake to give more than will just suffice to restrain his movements during the later stage. If this practice is adhered to the patient's reflex power of guarding his own air passages is never altogether in abeyance, and no dangerous amount of blood will remain in the lungs at the termination of the operation, as it is practically completely expelled by the act of coughing. Take my sixty-six cases of simple excision of the tongue. In not a single instance were ill effects observed which could be attributed to the entrance of blood into the lungs—a record which tends conclusively to show that the tongue can be safely excised without a preliminary laryngotomy.—*The Lancet, May 9th*, 1891, *p.* 1033.

49.—ON MALIGNANT DISEASE OF THE ŒSOPHAGUS AND ITS TREATMENT.

By John Duncan, F.R.C.S. (Edin.).

Of malignant tumours of the œsophagus, by far the largest number are squamous-celled carcinomata. Sarcoma as a primary affection is almost unknown. It may occur by extension of the disease from neighbouring parts, and I was once present at a sectio in which we found an œsophageal

stricture, small, annular, and tight, in a patient who had been repeatedly operated on during a period of thirty years for what was then called "recurrent fibroid" of the thoracic wall. I have at present under my care a case of stricture of the œsophagus, sent me by Dr. E. Carmichael, in whom there is also an undoubted sarcoma of the scapula. The immense probability is, then, that if malignant, we have to deal with a case of epithelioma.

The diagnosis established, we turn next to the question of treatment, and the first proposition which I would submit is, that if the disease be incapable of free removal (and most are so), the first consideration is to put it at rest, and that local interference is only to be justified when it is the lesser evil. I have not had an opportunity of removing a malignant affection of the œsophagus. It has been done once or twice with not very fortunate result, but I believe the operation to be justifiable if the tumour be within reach.

But while we interfere with the growth as little as may be, it is plain that we cannot allow the patient to die of starvation; some means of alimentation must be employed. There are several. First, there is rectal feeding, and much may thus be done. By, in this way, giving the œsophagus a complete rest it is not infrequently found that temporarily the passage becomes again patent, and by mouth and rectum the patient may be fairly sustained. But if we be reduced to feeding by the rectum only, the patient starves slowly, but still surely, while in certain cases the rectum proves refractory to nourishment.

Attempts have therefore been made to dilate or divide the stricture, or to lodge a tube in its lumen. In those, especially if they be aged, in whom the occasional passage of a soft tube is easy, maintains the patency, and affords a fair opportunity for nourishment, life will probably be prolonged as much as by any other means. But, on the other hand, it has been abundantly proved that the discomforts, disadvantages, and dangers of internal division, permanent lodgments, or frequent passages of instruments, simply hasten the inevitable end.

The operation of œsophagostomy, or opening the œsophagus below the strictured point, is plainly applicable to only a limited number of cases. Malignant stricture is usually too low in the tube. There are, moreover, certain disadvantages inherent in the operation. It involves the possibility of being ineffective, because there is a second stricture on a lower level, and it possesses a high rate of mortality.

But we have yet another method at command—the operation of gastrostomy—which I desire to commend to your consideration. Some surgeons have recently condemned the operation, as I think somewhat hastily, for I feel sure that if cases be

properly selected, and the operation carefully done, it greatly prolongs life, and adds enormously to the comfort of the patient. There can be no doubt that gastrostomy cannot be performed without liability to a considerable amount of shock. The nervous arrangements of these parts, it has long been recognised, react strongly upon injury, and the patients on whom gastrostomy is performed are necessarily of advanced age, and already enfeebled by imperfect alimentation. I performed it in a man of 75, hale for his years, but who had, before entering the Infirmary, been almost absolutely without food for a week. We endeavoured for some days to bring up his strength by feeding him per rectum, but without much effect, and rather than see him die of starvation I operated. His temperature and pulse fell quickly, and I opened the stomach next day, and fed him thereby. He did not rally, and died from cardiac collapse fifty-four hours after the operation. I should hesitate, certainly, to refuse gastrostomy on account of exhaustion, unless it were very extreme. There are people old and apparently worn-out, who yet suffer little from what we call shock. I have successfully operated in a man not certainly so old as the one I have mentioned, but older in appearance, and more emaciated. In him there was no shock whatever. But I should recommend that the operation be not too long delayed. When the passage has become so far closed that it is impossible to administer sufficient food to supply the natural waste of the body, the stomach should be opened. Shock is really the only unavoidable danger. The mortality which has attended the operation from other causes our modern surgery is capable of overcoming—the results, I mean, of septicity, whether local or general.

It is of immense importance, then, that the operation should be so performed that the patient shall be carried through the inevitable shock, and, of course, protected at the same time against septic infection of the peritoneum.

An incision is made in the wall of the abdomen, with the usual precautions, preferably parallel to the rib edge. I then pass my finger along the viscus, which I take to be the stomach, until I ascertain that it is so by feeling its passage through the diaphragm. In some cases you are then able also to feel the disease, and from its size to form a probable forecast of its future progress. I then fix the stomach to the wall of the abdomen by four encirling sutures which penetrate the whole thickness of that wall, and by many radiating, which penetrate only skin and peritoneum. In both cases the stitches include the serous and muscular coats of the stomach. I then make a small opening in the stomach, and introduce a soft rubber tube of the size of No. 8 catheter. This immediate opening I believe to be of great moment. At first I allowed several days

to elapse before opening the stomach, but I have gradually shortened the period, until now I open at once, and proceed immediately with small but frequent doses of liquid food. In order to diminish, as much as may be, the chance of septic infection of the peritoneum, I take care that the tube shall closely fit the opening in the stomach, I secure its orifice by a clamp, and surround it with powdered boracic acid. There is, in truth, no tendency to the egress of fluid from the stomach, and in no case have we seen the slightest inflammatory reaction. The result has been most satisfactory in lessening the amount of shock. There is yet in most cases a slight depression of pulse and temperature for two or three days, but immediately thereafter the patient rallies, and begins to increase in strength and put on flesh.

Under these circumstances the only point that remains is to determine the advantage which the patient may derive from the operation.

I have had two deaths from it. My other cases have been five in number, and they lived respectively for eleven, ten, five, four and three months after operation. In every case the patient rapidly increased in weight during his residence in the Infirmary.

When it is considered that in none of these seven had the patient more than a few weeks of life before him had he been left alone, that the two who died were on the extremest verge of absolute starvation, that those who lived had in every case months of comfort, and in some of apparently perfect health, and that in them one effect undoubtedly was to diminish by rest the rapidity with which the disease was spreading,—when these things are considered, it is difficult to avoid the conclusion that, when the patient has begun to suffer from insufficient nutrition, the operation ought to be performed, and that it need not even be denied when the marasmus is far advanced.

If, again, the operation be justifiable in malignant disease as a euthanasia, *a fortiori* it is to be advised in traumatic or cicatricial stricture. Whether or not Loreta's method of stretching be combined with it, it holds out to such patients a quite indefinite prospect of longevity. I have not had an opportunity of performing it myself. Only three such cases have ever come under my care. One of them was the syphilitic gumma, which I think was more largely inflammatory than cicatricial. The others, a man and woman, were both successfully treated by dilatation. The man had a stricture, the result of swallowing caustic potash solution, so tight that only a bougie of urethral size, No. 4, could be passed. With immense patience it was ultimately overcome, and he left the Infirmary able to pass a large-sized bougie for himself. Paren-

thetically I may observe that I found in his case that the only way to advance in the early stage of his treatment was by the daily passage of the instrument.

I have been able, then, to avoid operation in traumatic stricture, but I have no hesitation in saying that, in cases which resist dilatation (and dilatation means an infinite amount of delicacy and care), gastrostomy ought to be performed. — *Edinburgh Medical Journal, April*, 1891, *p.* 887.

50.—TO PERFORM ABDOMINAL SECTION.

By Lawson Tait, F.R.C.S.

[The following excerpt is taken from a clinical lecture on the "Details necessary in the performance of Abdominal Section."]

The patient you now suppose to be anæsthetised, and I am about to commence my operation. You will see I take my knife in my hand as if I intended to cut by it, and not to write a prescription ; with the pad of my forefinger placed just where the steel blade and the wooden handle meet on its right-hand side, I steady it with its point downwards and send it straight through the skin at an angle of 45°, rapidly drawing it down through that part of the skin I wish to divide with its edge at an angle of $23\frac{1}{2}°$; I bring it out where my incision is to end again in a rectangular position, thus making a clean, well-made tailless incision exactly the length I require and dividing at one blow everything down to the tendinous aponeurosis. The next proceeding is to divide this structure, and you must divide it in a way exactly the opposite of that in which you are told to divide it in text-books, where instructions are given to divide the linea alba; that is just the thing you must not divide. What you must do is to open the coat of the tendinous covering of one of the recti muscles, it matters not which, and, lifting the edge of the muscle outwards, you must divide the coat of the tendon on its inner side, for in this way you have some kind of security that you will have tendinous reunion, and that you cannot be sure of if you divide the white line. This double tendinous division you make as far as you think requisite ; that will be as far as you have divided the skin ; and then, by a few touches, you divide the sub-tendinous fat and come upon the transversalis fascia, a structure which you can easily recognise by its characteristic linear markings. You will notice that I say nothing about directors ; in such operations directors ought never to be used ; they are clumsy elements of danger which the experienced surgeon will never employ. Instead of them he will take a pair of his catch forceps, and he will take a delicate

grip of the transversalis fascia, including, if he likes, the peritonium in the same embrace, and he will take another smaller grip about half an inch away from the first, and in the same horizontal line. The assistant will put upwards and outwards one of these pairs of forceps, and the operator will pull up the other and nearer towards him. Between the two a slight ridge of fascia and peritoneum will rise, and a slight notch with the knife through this ridge will, if it open the peritoneum, immediately reveal a little chasm, the air entering the notch, and all below it will at once fall away. If he has not opened the peritoneum by his first cut, he will seize the peritoneum similarly, notch it, and then the subjacent textures, if they have not been embraced by the forceps as I have said, will disappear. A clumsy operator may seize omentum or even intestine in the forceps' grip, but such a mistake the light-fingered and skilful manipulator can easily avoid. If, however, such an undesirable embracing should have occurred, care must be taken not to divide these structures. The moment the air has entered the peritoneum—the black space beyond the opening will make the fact evident—the forefinger of the left hand must enter the cavity, and there must be no further use of the knife. The extension of the incision must be made by a ripping process by the fore and middle fingers, and must be continued till the opening has been made as extensive as that of the skin. Your abdominal section is now complete.

During the process of the making of your wound there has been some bleeding, perhaps one or two arterial points which required to be secured. These catch forceps, the original invention of M. Koeberle of Strasburg, enable us to dispense with the old-fashioned process of tying arteries almost completely, for as each bleeding point is noticed a pair of these forceps is applied, they are left to themselves, and the succeeding steps of the operation are proceeded with. By the time it has been accomplished the forceps may be removed, and it will be found in all probability that the forcible temporary pressure exercised by them has been sufficient to arrest the bleeding. It is quite rare in my practice that a vessel in the abdominal wall has to be tied. You have sponged away all clot; if necessary you have washed out the abdomen; you have secured by various contrivances, of which I shall afterwards speak, bleeding points that may have been met with in the abdominal cavity; you have carried through the various steps of the completed operation which may have become necessary, and now you are about to close the abdomen. It may be that you have had to introduce sponges. Be careful, be *most* careful, that you know exactly what you have done in this particular; no precautions that you can take concerning the cleanliness and good quality of your sponges can be too great;

no precautions can be too great to be sure that you have a known quantity of sponges, and that you take away from the operating table just as many sponges as you brought to it—in fact, to secure that you leave nothing inside the patient's abdomen that was not there when you began. And now you have to close the abdomen. In spite of all that has been written on this subject, and in spite of all the useless experiments which have been made upon animals for the purpose of settling questions which ought never to have been raised, there is only one consideration that need guide you—that it is your duty to restore the parts you have disturbed to a condition as nearly as possible that in which you found them. You have divided skin, subcutaneous fascia and tendon (it may be also muscle), and peritoneum, and as all these structures have been divided, so they must all be put in such apposition that they may heal as accurately as possible. For this purpose there is nothing so good as a common sewing-needle and a piece of pure silk introduced as a continuous suture, but not drawn tight. You will see, as I proceed here, I leave a large loop at each insertion of the thread, and I do this with a purpose. First of all, it guides me in the more accurate insertion of my needles; secondly, it may be that it enables me to renew my sponging should that become necessary, for the continuous nature of the thread will not permit of its disturbance, and then the stitching is far more rapidly done in this way than by any other method. You have to decide whether or not you will insert a drainage-tube, and your dressing need consist only of a piece of unmedicated dry cotton-wool; or if you adopt, as I have done for the last few weeks with some advantage, an additional agent for drying your wound and keeping it dry (for that is the best of all forms of true antiseptics), the powder of boracic acid will be found the most satisfactory drying agent for any kind of wound.—*The Lancet, September* 12, 1891, *p.* 598.

51.—A CASE OF COMBINED PYLORECTOMY AND GASTRO-ENTEROSTOMY FOR CARCINOMA OF THE PYLORUS; RECOVERY.

By F. Bowreman Jessett, F.R.C.S., Surgeon to the Cancer Hospital, Brompton.

As this is the first published case of the combined operation of pylorectomy and gastro-enterostomy being performed in this country, I think it right to record it as early as possible. I showed the patient herself at the Clinical Society on October 23rd.

Ellen G——, aged thirty-eight, married, was admitted into the Cancer Hospital, Brompton, under my care, on July 25th, 1891. In March, 1890, she had vomiting, which has remained on and off since. She has suffered much from constipation. Three days after confinement, in November, 1890, she says, Dr. Stonham, who was attending her, noticed a tumour in the right side of the abdomen ; previously to this she had not observed it. During the last month this has grown rapidly. The patient has been confined to her bed during the three weeks prior to coming to the hospital, owing to pain and weakness ; she has felt latterly much pain in the right side and back, and recently has suffered from frequent vomiting. Dr. Stonham arrived at the conclusion that she was suffering from pyloric obstruction, probably of a malignant character, and in consultation with Dr. Coghill advised her to submit to an operation.

July 28th.—Stomach-tube passed, and a quantity of sour-smelling fluid drawn off, the colour of beef-tea. The stomach was thoroughly washed out with warm water. It was found to be enormously dilated, extending to the pubes. Succussion splash readily produced. After the stomach was emptied the parietes were quite flat, and a tumour connected with the pylorus clearly made out. It appeared of a sausage shape, measuring apparently about three inches long by two inches and a half wide. The tumour was freely movable, and situated on the right side of the middle line, extending from about one inch above the umbilicus downwards and to the right for about three inches.

During the time the patient had been in the hospital she was fed by means of nutritive and stimulating enemata, only being allowed a little Brand's essence and water by the mouth. On July 30th the stomach was washed out with three pints of warm water, one pint containing 10 per cent. of salicylate of soda, which was drained off. The patient complained of a feeling of exhaustion afterwards. On the 31st she had some vomiting and diarrhœa ; pulse 108. On August 2nd the diarrhœa had ceased, but she vomited during the day from time to time. On the 4th the patient was feeling better, and no vomiting occurred. She was now being sustained entirely by beef-tea, port wine, and brandy enemata, and zyminised beef suppositories given every four hours alternately. Preparatory to the operation the abdomen was ordered to be well washed twice a day for two days with a 10 per cent. solution of liquor potassæ and water ; after which a pad soaked in 1 in 2000 solution of perchloride of mercury was kept constantly applied. The night before the operation the stomach was washed out with a weak solution of salicylate of soda and water. In the morning she was given a beef-tea (3 oz.) and brandy (1 oz.)

enema, and half an hour before the operation an enema of beef-tea (2 oz.) and brandy (2 oz.) was administered. When the patient was on the table a hypodermic injection of $\frac{1}{80}$ gr. of atropine was given.

Operation.—August 4th: Two hot-water cushions being placed on the table and covered with warm blankets, and the patient being placed thereon, Dr. English proceeded to administer ether, and Mr. Elam kindly assisted me in the operation. An incision three inches long was made in the middle line from the umbilicus upwards through the abdominal parietes, which were so very thin that the peritoneum was cut down upon directly, and no bleeding points required catching. The peritoneum was divided the whole length of the parietal incision, and caught in three places on each side with pressure forceps. The tumour in the pylorus was seized and readily brought out through the wound; it being found to be perfectly free from all surrounding organs, I determined to remove it. A cloth wrung out in warm carbolised water was packed round the growth, which was found to extend for about four or five inches along the walls of the stomach. I next, with an aneurism needle armed with No. 1 chromic gut, ligatured the vessels running along the larger and smaller curvature of the stomach, a little to the left of the point at which I proposed to make the section, and with a pair of broad ligament forceps I clamped that portion of stomach on the duodenal side of the proposed section. I then tore through with my finger the lesser omentum, and, Mr. Elam firmly holding the stomach, I proceeded to cut it across between his fingers and the clamp forceps with scissors, catching up each bleeding point as it was divided with pressure forceps. The growth with the pylorus, being thus severed from the stomach, was allowed to hang loosely out of the wound, covered with a cloth soaked in warm carbolised water. The vessels in the divided edges of the stomach were now quickly ligatured with catgut, and as it was found that there was a quantity of fluid in the stomach, this was carefully syphoned off by means of a rubber stomach-tube, and washed out. The edges of the stomach were next united by means of a continuous chromicised catgut suture passing through all its coats. A second line of quilt sutures of No. 1 chromicised gut were now passed through the serous and muscular coats about an eighth of an inch from the edges; the ends of each pair of these sutures when passed were secured by clamp forceps, to allow of all the sutures being inserted before tying. Nine of these sutures were introduced in all; as each of these were tied care was taken to thoroughly invert the cut edges of the stomach, so as to ensure a good surface of peritoneum being approximated. When all these sutures were tied and the union appeared complete, I

allowed the stomach to drop back into the abdomen. I next passed an india-rubber ligature lightly round the duodenum about two inches from the pylorus, and clamped that portion of the duodenum close to the pyloric orifice with forceps, and divided it between the forceps and the elastic ligature, leaving as much of the duodenum as I could with safety. The pylorus and growth were now free excepting at their attachment to the great omentum. This I transfixed with No. 4 Chinese silk and ligatured in the same manner as an ovarian pedicle, and removed the growth by cutting the omental attachment across with scissors. The divided end of the duodenum was then united by means of a continuous chromicised catgut suture passing through all its coats and a second row of quilt sutures of No. 1 chromicised gut, in the same manner as that described for the union of the divided end of the stomach, and allowed to drop back. The rubber ligature was now removed from the duodenum, a sponge was introduced into the cavity, and the first part of the operation thus completed. I then proceeded to perform gastro-enterostomy. I first pushed the transverse colon and omentum over to the right and passed the index finger of my right hand over it, and caught up a loop of the jejunum close to its origin, and drew it out through the wound. The stomach was again withdrawn, and an opening made into it about an inch and a half long, parallel to and about an inch from the greater curvature, and two inches from the divided end. A decalcified bone plate, threaded with two lateral chromicised catgut ligatures and two longitudinal No. 1 silk ligatures, was introduced. The lateral ligatures were passed through all its coats about an eighth of an inch from the divided edge. The ligatures were given to an assistant to hold, while I proceeded to introduce a similar bone plate into the jejunum. Before doing this two india-rubber ligatures were passed round the intestine almost four inches apart, and fastened lightly. An opening in a longitudinal direction, about an inch and a half in length, was made in the convex surface of the jejunum between the india-rubber ligatures, and a bone plate introduced, the lateral catgut sutures being passed through all the coats of the bowel. The two plates were now held in accurate apposition by Mr. Elam, while I tied the corresponding ligatures of the two plates. In tying the upper lateral ligature a considerable portion of mucous membrane prolapsed, and was with difficulty got into place, so I cut it off with scissors, after which the upper edge was readily made to go into its proper position. A row of quilt sutures, five in all, were introduced along the upper edges and ends of the plate, and the parts, being thoroughly cleansed, were dropped back. The sponge which had been placed at the cavity left by the resection

of the pylorus was removed, and, all being dry, the abdominal wound was closed with silkworm-gut sutures in the usual manner, the wound dressed with sublimate gauze, and a large pad of wool and a many-tailed bandage firmly applied. The patient was then returned to bed.

The patient bore the operation exceedingly well ; the only time that her condition appeared to give anxiety was after the division of the stomach and stitching up the duodenal opening. During the latter part of the operation she rallied a great deal. The operation lasted one hour and forty minutes. The portion of stomach and pylorus removed measured about 6 in. in length and 4 in. from above downwards at the gastric end. The specimen was shown at the Clinical Society with the patient. It contained a mass of growth, which was firm and not ulcerated, and which almost completely obstructed the orifice of the pylorus. There were no adhesions. The patient was ordered to have enemata of brandy (2 oz.) and beef-tea (2 oz.) every two hours, and zyminised suppositories every two hours ; if she expressed a wish for anything by the mouth she was to be allowed a tablespoonful of tepid water every hour.—Aug. 5th : Passed a good night ; slept fairly well ; no vomiting. The rectal feeding was now given every four hours ; urine to be drawn off every six hours. To have two teaspoonfuls of peptonised milk and four teaspoonfuls of tepid water every hour by the mouth.—6th : Slept well ; no vomiting ; complains of very slight pain in abdomen ; bowels opened. The milk and water by mouth to be increased to double the quantity. Enemata as before.—7th : Wound dressed. There has been no tympanitis. No vomiting or other bad symptom.—At 9 p.m. the patient complained of pain in the back and at the epigastrium. At 12 p.m. the pain had considerably increased. No tympanitis. Food by the mouth to be discontinued for a while.—8th : Better ; free from pain ; no vomiting ; bowels opened. One teaspoonful of peptonised milk to be taken every hour. At 2 p.m. she was ordered to take two teaspoonfuls of milk and water every hour, and one teaspoonful of Brand's essence every four hours.—9th : Patient decidedly stronger ; pulse improved. Complains of a little soreness at the right iliac and left hypochondriac regions.—12th (a week after the operation) : The patient sleeps well and continues to improve daily. Allowed strong beef-tea, custard, and jelly by the mouth. She is now taking four ounces of beef-tea three times a day ; three pints of milk, four eggs, and jelly and mutton broth in the twenty-four hours. All enemata discontinued ; suppositories three times a day.—18th (a fortnight after the operation) : Sutures removed from abdominal wound. Suppositories discontinued. Diet as on the 12th.—20th : The silk

ligature loops which held the plates, and with it a portion of the chromicised gut ligature, have been passed per rectum. Diet to consist of boiled fish, tripe, milk, strong beef-tea, mutton broth, jelly, and eggs.—Sept. 17th : The patient has made uninterrupted progress, been out for drives, and takes her food well.—Oct. 23rd : The patient was shown at the Clinical Society. Since the operation she has increased nearly 2 st. in weight, which on Sept. 16th was 6 st. 4½ lb. ; Oct. 1st, 7 st. 4 lb. ; Oct. 21st, 7 st. 11 lb.—*The Lancet, October* 24, 1891, *p.* 921.

52.—ON A METHOD OF PERFORMING A RADICAL CURE OF INGUINAL HERNIA.

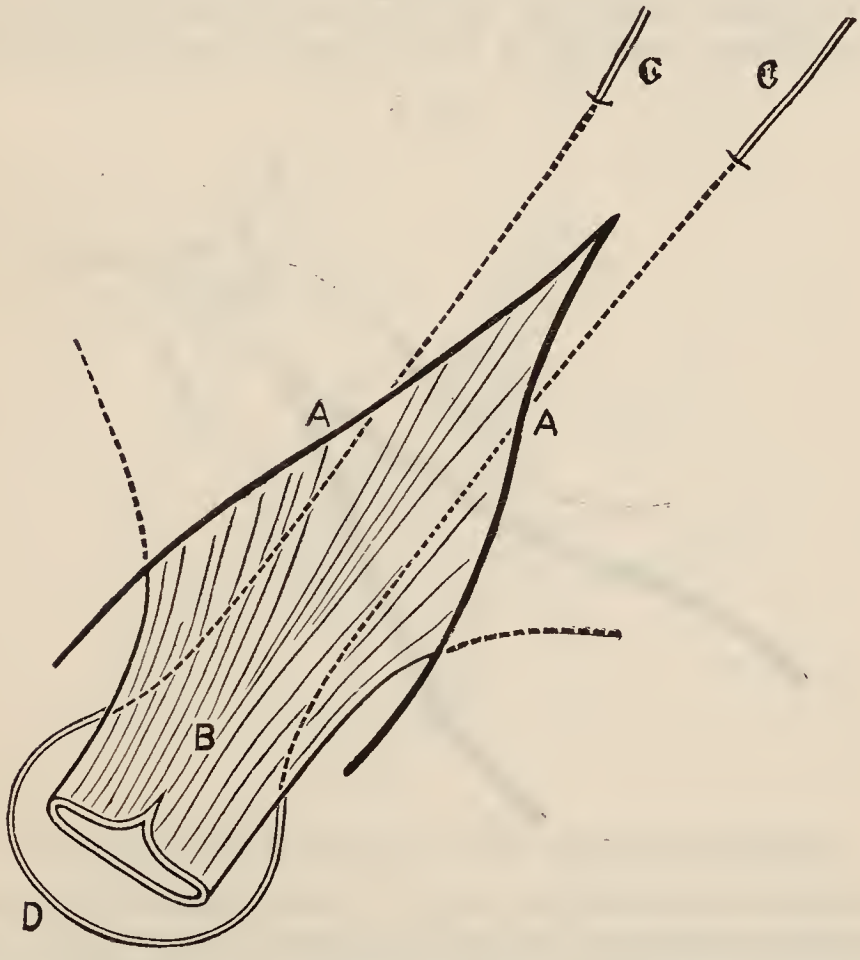
By W. H. Bennett, F.R.C.S., Surgeon to St. George's Hospital.

In cases of inguinal and femoral hernia, in which the sac is occupied by a knuckle of gut only or a solitary mass of omentum, the indications for the radical cure appear to be effectually met by simple invagination of the whole or a portion of the sac (that is to say, turning it inside out), and attaching the fundus of the invaginated part at a point some distance above the abdominal orifice of the canal through which the hernia descends.

Details of the operation by invagination in inguinal hernia.—The upper part of the sac, the external abdominal ring, and the aponeuroses around for an inch or thereabouts, are exposed freely by an incision through the superficial parts in the direction of the long axis of the hernial tumour. The sac, after having been carefully isolated from its connections just below the external ring (the lower part being left entirely undisturbed) is opened, and the contents reduced into the abdomen if they have not already returned spontaneously. Should the hernia consist of omentum only, this must be freed from adhesions, if any exist, the redundant portion ligatured and removed, and the stump returned. The sac is now divided just below the external ring, the distal portion being allowed after all bleeding has been averted, to drop back into the scrotum. The proximal part of the sac is next separated from the sides of the canal as high up as the internal ring by gentle manipulation. One finger (or more if the ring is large) of the left hand having been introduced into the abdominal cavity through the neck of the sac, any bowel lying near the internal ring is pressed back out of the way. An ordinary pile needle on a handle (unthreaded) is then made to enter the abdominal aponeuroses about three quarters of an inch above the upper margin of the external ring, a little to the outer side of its middle line, and transfixes the whole

of the aponeuroses and peritoneum impinging on the end of the finger which occupies the neck of the sac. The needle, guided by the finger, is passed down the inside of the sac and made to pierce its outer wall at a point about half an inch from the cut edge. The needle having been threaded with a tendon or catgut suture, previously prepared, and not less than twelve inches long, is withdrawn, taking one end of the suture with it. The result is that one end of the suture is seen passing into the abdominal aponeuroses above the external ring, whilst the other

Fig. 1.



A, Pillars of ring. B, Sac divided and isolated. C, C, Invagination sutures passing through aponeuroses and forming loop, D.

issues from the outer wall of the proximal part of the sac near its cut edge. The needle, again unthreaded, is now made to transfix the abdominal aponeuroses and peritoneum, about half an inch internal to the point at which it entered before, traversing the sac in the same way, finally piercing the inner wall at about the same distance from the cut edge as it had done on the outer side. After having been threaded with the lower end of the suture, the needle is withdrawn, carrying the suture, as before, with it. The two ends of the sutures will now be

seen entering the aponeuroses above the external ring and forming below a loop over the cut edge of the proximal portion of the sac, as shown in Fig. 1. The open end of the sac is next occluded by a few stitches of catgut, or by means of a silk ligature placed around it as close as possible to the spot at which the suture pieces its walls. The succeeding step is the invagination of the sac, which is effected by pushing with the finger the closed end through the canal into the abdomen, the invagination sutures, passing through the aponeuroses above the external ring, being at the same time drawn tight. By this proceeding the sac is turned completely inside out (Fig. 2), and its fundus firmly attached to the peritoneal surface of the anterior abdominal wall some

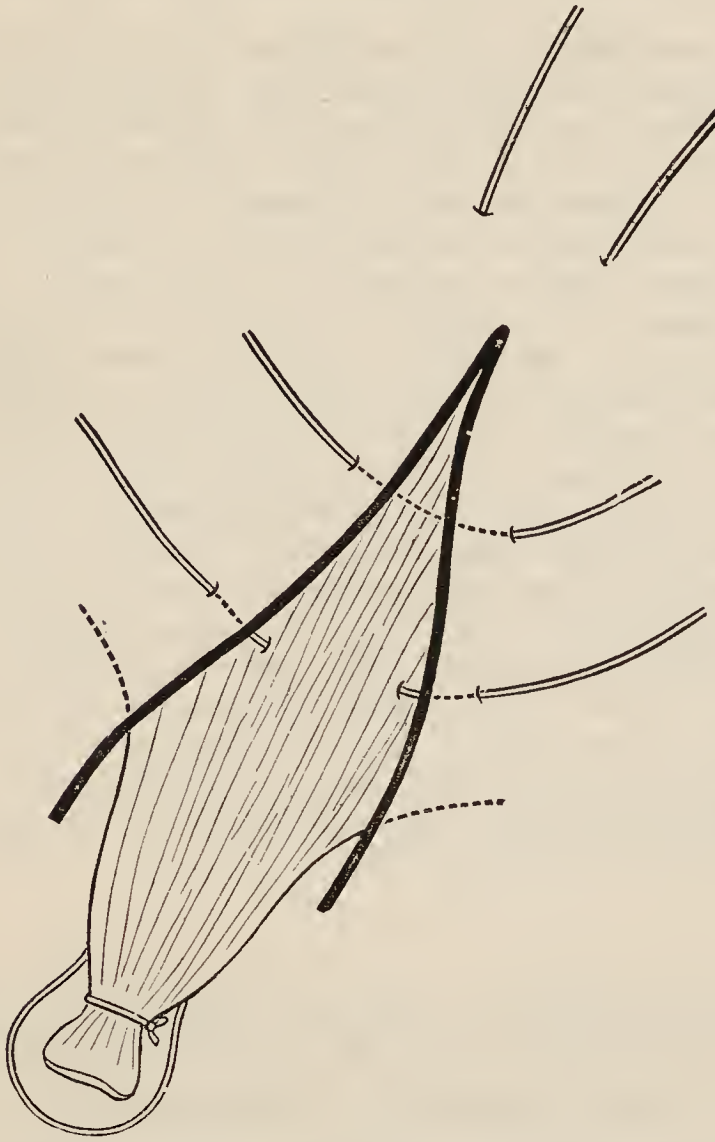
Fig. 2.

The dotted line shows the sac reduced and turned inside out.

distance above the internal ring. The margins of the canal are then brought together in the usual way by stout silk sutures, which pass through the whole thickness of each wall, a drainage-tube placed in the portion of the sac remaining in the scrotum, the superficial parts brought together with horsehair stitches, and an antiseptic dressing carefully applied. Unless the hernial canal is very small indeed, it is better, although not absolutely necessary, that the upper one or two sutures used for bringing the walls of the canal together should transfix the sac (Fig. 3), passing immediately behind its anterior wall, but in front of the invagination suture. This is best done before the open end of the sac is closed, in order that the finger may be introduced and used as a guide to the needle as it crosses the interior of

the sac, and also to protect any bowel which may by chance be forced down—*e.g.*, by coughing. The sutures which transfix the sac are left loose until the invagination has been completed, and then tightened up, bringing the sides of the canal together, and at the same time fixing the anterior wall of the sac across the abdominal aspect of the internal ring. This operation, although rather complicated for description, is perfectly simple

Fig. 3.



Showing sutures for approximating the sides of the canal piercing anterior wall of sac, and left loose until after the sac has been invaginated.

in practice, and provides the essentials for the radical cure—*i.e.*, (1) a barrier across the abdominal orifice of the canal, and (2) the complete obliteration of the hernial fossa in the peritoneum by the dragging up of the posterior wall of the sac, which brings an entirely new surface of peritoneum into relation with the internal ring. It is important to note that the barrier across the ring is composed of two layers of peritoneum, placed

with their serous surfaces in contact, resulting in speedy adhesion and matting together of the parts, which thus afford a much stronger barrier than would appear likely at first sight. Moreover, in consequence of the rapidity with which this adhesion occurs, the parts are much earlier in a condition to bear pressure than is the case where the consolidation depends upon the relatively tardy union of connective tissue, as is the case in some of the other recognised operations for the radical cure.

It is also clear that by this method no projecting mass is left over the internal ring, as the small lump formed by the fundus of the invaginated part of the sac is, if properly arranged, well away from the orifice of the canal. The only point in the details of the proceeding which presents any difficulty is that which is common to all of these operations—viz., the separation of the sac from the constituents of the cord in cases of congenital hernia. Very rarely this may be hardly practicable with a due regard to the safety of the cord, and if this should be the case it is better to leave a strip of the sac attached to the cord. If, however, the attempt at isolation be confined to the upper part of the sac, it is quite exceptional for any serious difficulty to arise, for it is a good practical point to bear in mind that the nearer the sac approaches the abdominal cavity the less intimate becomes its connection with the cord. Hence, I never attempt to separate the cord from the sac at any other point than just outside the external abdominal ring, leaving the lower part entirely undisturbed. The isolation or removal of the lower part of the sac is always unnecessary, frequently impracticable, and, if persisted in, may endanger the integrity of the testicle, whilst it certainly prolongs the operation.—*The Lancet, September* 12, 1891, *p.* 600.

53.—ON THE RADICAL CURE OF HERNIA IN CASES IN WHICH THE CONTENTS OF THE SAC CONSIST OF BOTH OMENTUM AND BOWEL.

By W. H. Bennett, F.R.C.S., Surgeon to St. George's Hospital.

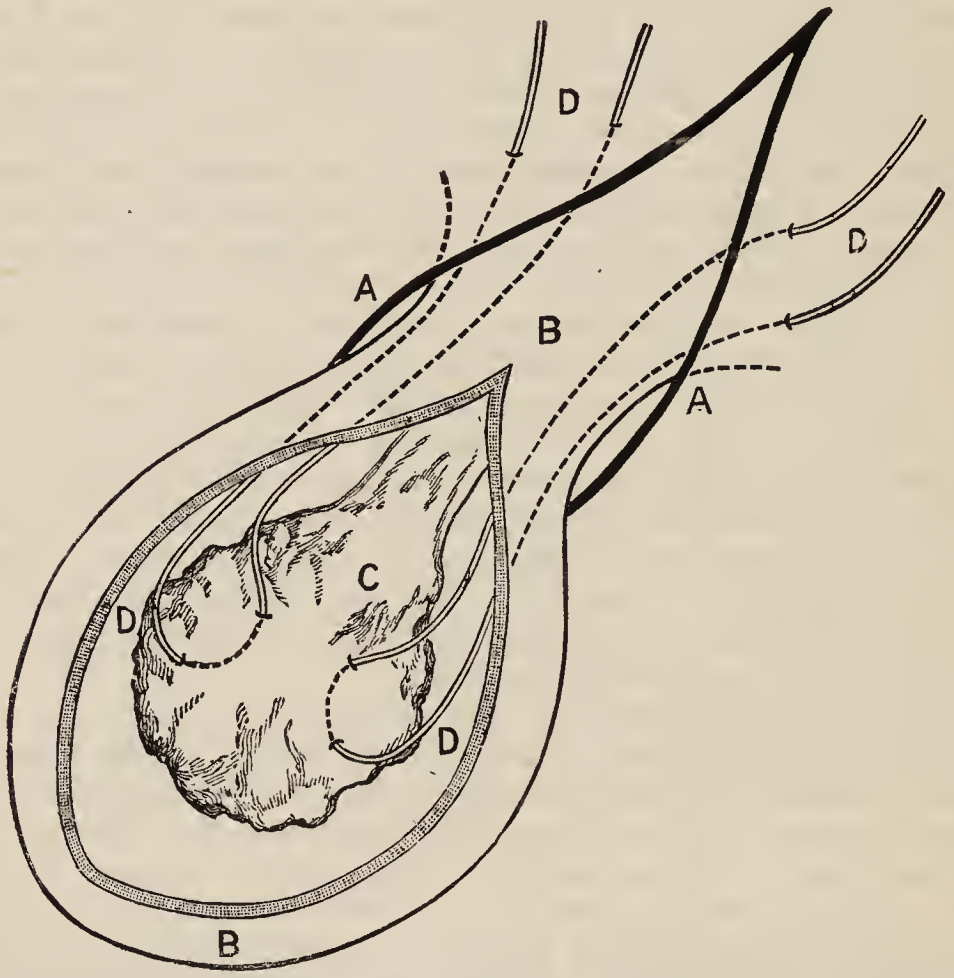
As has already been stated, the prospects of a radical cure in the true sense, *i.e.*, leaving the patient entirely independent, under ordinary circumstances, of the use of trusses—are considerably less in these cases than in those previously discussed, the main obstacles to complete success being the large size of the ring, the rigidity of the structures, which render the approximation of the walls of the canal difficult

and sometimes impossible, and the entire absence of any inclination to spontaneous contraction of the parts, excepting in hernia of very recent origin, rarely seen in this class of case, which is almost always of long standing. It necessarily follows that the amount of relief ultimately obtainable will often depend solely upon the actual strength of the barrier across the internal ring, since the help afforded by the approximated walls of the canal is in most cases not of much *permanent* value. The degree of the rigidity of the parts is determined to a great extent by the chronicity of the hernia; it also appears to be in direct proportion to the amount of omentum which the sac contains, whilst it is comparatively independent of the quantity of bowel. It has long been an accepted principle in operations for the radical cure that all redundant or altered omentum should be ligatured and removed, the stumps being returned into the abdomen and left to their own resources. Personally, I have for some time felt that by this wholesale removal valuable material is sacrificed, some of which should be utilised for strengthening the barrier across the internal ring—certainly in all inguinal cases of this kind, and in some umbilical herniæ. Acting upon this view, I have been led to utilise the omentum in appropriate cases in the way described in the following operation, which is not intended to apply to instances in which merely a tag of recent omentum is found in the sac, whilst operating upon younger subjects, in whom the ring is nearly always of moderate size, with supple margins.

Details of the operation for the radical cure by the use of an omental pad in inguinal hernia.—The parts having been exposed in the manner already described, the sac is opened and the bowel returned, any adhesions having been dealt with in the ordinary way. The omentum is now examined, and a flattened piece selected, large enough to cover the internal ring, and overlap its edges for some distance. Should there be no single piece of the desired size or shape, two smaller portions may be stitched together with carbolic catgut. In most cases, however, a suitable flap is obtainable by carefully disentangling the omental masses, especially when the structure has become large and nodular from spontaneous growth in the sac. In an ordinary way it is preferable that the flap should be firm, and even indurated, rather than too thin and recent. The portions of omentum not required having been ligatured and removed two sutures of carbolised catgut, about twelve inches long, are passed by means of a needle through the omental flap, one on each side, a short distance from its edges, care being taken that no vessel is transfixed by the thread. One or more fingers of the left hand are now introduced by the side of the omentum

(which is not yet reduced) into the abdomen through the neck of the sac, and a pile needle on a handle (unthreaded) is passed, from without inwards, through the abdominal aponeuroses about half an inch from the outer margin of the external ring, rather below the level of its upper end. Guided by the finger, the needle passes down the inside of the sac, until the point projects through the incision made in laying it open. The needle, having been threaded with one end of the outer of the

Fig. 1.

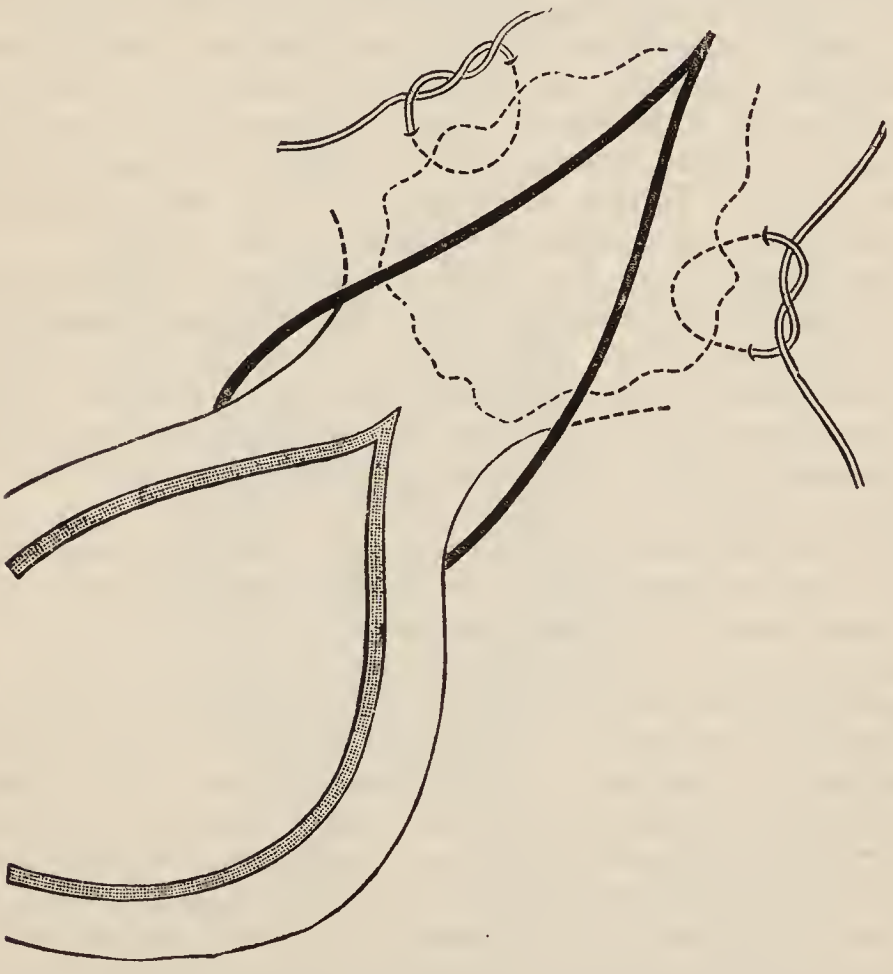


A, Pillars of ring. B, Sac laid open. C, Omental pad. D, Sutures passing through abdominal aponeuroses and peritoneum above, and piercing edges of omental pad below.

two sutures which transfix the omental flap, is withdrawn, carrying with it the suture end, which is left projecting from the abdominal aponeuroses at the point where the needle entered. The needle (again unthreaded) is now made to pierce the aponeuroses and peritoneum about half an inch below the first puncture, traverses the interior of the sac in the same way, and is then threaded with the other end of the outer suture, which is carried through the aponeuroses by the withdrawal of the needle in the same way as before. This proceeding is repeated, step by step, on the inner side of the ring, with the

suture transfixing the omental flap near its inner edge. The resulting arrangement of sutures, &c., is seen in Fig. 2. The omental flap, together with any ligatured stumps, not previously reduced, is now carefully returned into the abdomen, the suture ends (D, Fig. 1) being at the same time drawn upon so as to bring the flap over the internal ring and retain it in position (Fig. 2). The sac is then dealt with in any manner which seems suitable. If the invagination method is used, the final tightening of the sutures is left until after the sac has been invaginated in the way already described, care being taken that

FIG. 2.



The dotted lines show omental pad reduced and retained in position.

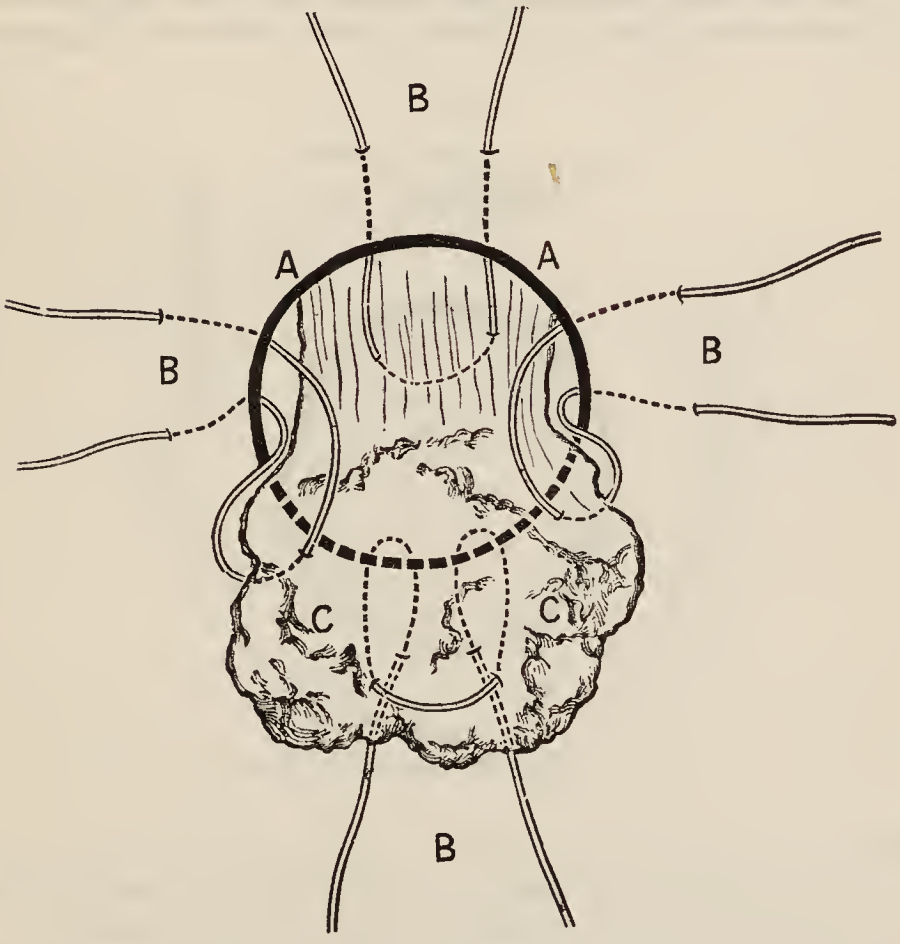
the invagination suture passes down through the sac in front of the omental pad, so that when reduced and turned inside out the sac lies in front of the omental pad, between it and the peritoneum of the anterior abdominal wall. The sac having been fixed, the sutures retaining the omental pad in position are drawn tight and fastened off. The operation is completed by the bringing together of the wound in the superficial parts after the walls of the canal have been approximated completely, or as nearly as practicable, by means of deep sutures of stout silk,

the upper one or two of which may with advantage be made to transfix the sac in the way previously mentioned. By this operation a barrier is provided across the internal ring, which is composed of the inverted sac in front and the omental pad behind, arranged in such a way that the serous surface of the front wall of the sac is in contact with the peritoneum on the anterior abdominal wall, whilst the omental pad is firmly fixed across the serous surface of the posterior wall of the sac. The close and firm adhesion which rapidly takes place between these parts produces a barrier of no ordinary strength. In addition to this, the general matting together which occurs greatly helps in keeping together the walls of the canal, therefore acting not only as a barrier, but also as a uniting medium. In bringing together the walls of the canal it is important to use sutures of a permanent nature (stout silk is, on the whole the best material), which should transfix the parts quite close to the edges of Poupart's ligament on the one hand, and pass well through the conjoined tendon on the other.

From what I have seen of this operation, I believe it offers a better prospect of complete success in the class of case for which I recommend it than any other. It is hardly necessary to point out that it entirely differs from the practice which has been adopted by some of fixing the omentum between the walls of the canal, which is obviously objectionable from the wedge-like action which must necessarily be exerted by any plug left engaged in the canal. It has also been said that omentum fixed in the canal is prone to act as a guide for conducting the bowel to a weak point in the abdominal wall, but of this fact I am by no means sure. In the operation I now advocate the first of these objections clearly has no place, and, so far as the second is concerned, I venture to submit that, even if the bowel were conducted by the stalk of the omental pad to the situation of the original hernial orifice, the wall is there so strengthened that it would probably withstand pressure as well as the parts in the same locality would do in a patient with a weak ring who had never suffered from rupture. One other objection remains to be noticed—viz., the possibility of intestinal obstruction resulting from a knuckle of gut becoming strangulated by the stalk of the attached piece of omentum. I do not think that much weight should attach to this point, for, although Mr. Greig Smith mentions a case in which strangulation was produced in this way in a patient in whom the omentum had been fixed in the ring, it must be an occurrence of such rarity as to hardly afford any valid objection to a proceeding such as the method here advocated, in which the advantage derived from the attachment of the omentum over the internal ring altogether outweighs the risk of harm resulting from it. Moreover, the

fact should not be overlooked that omental stumps, after having been ligatured and returned in orthodox fashion, occasionally contract strange adhesions. For example, I have seen an instance in which a band, produced by the adhesion of a stump of omentum, was found stretching across a knuckle of the ileum, and although no obstruction had actually resulted, it was plain that most of the conditions necessary for its production were present. I am, therefore, inclined to think that practically the risk of obstruction is really not more when the omentum is attached than when left to itself.

FIG. 3.



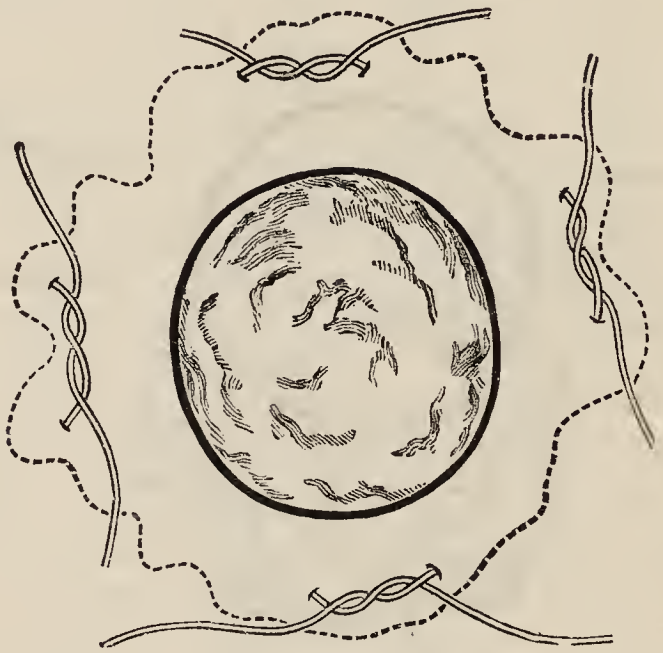
A, Margin of ring. B, Sutures. C, Omental pad.

In *umbilical hernia* the sac is exposed and freely laid open. Any adhesions which exist having been dealt with, the bowel is reduced. The sac is then dissected out and cut off short at the margin of the ring. A suitable pad of omentum is next selected, the remainder being removed or returned into the abdomen, and four sutures, passing through the aponeuroses and peritoneum, a short distance from the margin of the umbilical opening, are arranged as shown in Fig. 3. After reduction and fixation of the omental pad across the back of the

ring, in the manner indicated in Fig. 4, the margins of the ring are brought together by deep sutures of stout silk or tendon, which include the peritoneum, and the operation concluded by uniting the edges of the wound in the superficial parts.

The cases of umbilical hernia in which this method may be considered undoubtedly useful are those in which the ring is large, and its margins so resistant that approximation, if not actually impossible, can only be effected at the expense of great tension. In such cases the adhesion of the omental flap across the back of the umbilical orifice not only helps to prevent the margins of the ring from dragging apart, but also obliterates the depression along the posterior aspect of the apposed edges, which is otherwise prone to form a fossa for the lodgment of

FIG. 4.



gut, which, by gradual distension of the parts, leads to a reproduction of the hernia, in the same way that the ventral herniæ seen too commonly after abdominal section are developed.

It cannot be too often repeated that the radical cure of hernia is hardly likely to be effected with equal success in all cases by the same operation. I have, therefore, ventured to call attention to the methods now described, not because I think them universally appropriate, but because, when practicable, they are in some respects better adapted for attaining the object in view than any other plan with which I am familiar. At the same time I wish it to be distinctly understood that I have no desire to imply that they should in all cases supersede other well-devised plans, notably those of Macewen, Greig Smith, and Stanmore Bishop.—*The Lancet, September* 19, 1891, *p.* 648.

54.—ON THE IMPORTANCE OF PERFORMING THE OPERATIONS FOR RADICAL CURE AFTER STRANGULATED HERNIA.

By C. B. Lockwood, F.R.C.S., Surgeon to the Great Northern Hospital.

It is now the established custom amongst surgeons to complete the operation for strangulated hernia by ligaturing and removing the hernial sac. Others go further, and, in addition to removing the sac, endeavour to repair the abdominal wall, and thus effect a cure. There is little doubt but that the mere removal of the sac has had a favourable influence upon the mortality of the operation, whilst the further proceeding of repairing the abdominal wall has effected many cures. In what follows I merely propose to bring together the kind of evidence which has induced surgeons to supplement kelotomy with removal of the sac or with a curative operation.

Of course patients with strangulated hernia are sometimes so critically ill that the idea of performing a prolonged operation, such as that of repairing the abdominal wall, cannot be entertained, or it may be forbidden by the condition of the intestine. But in the absence of such contra-indications it will be allowed that the ligature and removal of the sac is imperative, and the repair of the abdominal wall most expedient. The correctness of this proposition is very clearly borne out by the records of cases which were operated upon many years ago, and before removal of the sac was practised.

Taken in what may be called chronological order, we find that, when the hernial sac is not ligatured and removed, the intestine not infrequently comes down again. When this happens a few hours after the operation, there is no doubt but that the *recurrence* has taken place into the original sac. For instance, a woman, aged 63, had been operated upon for a strangulated femoral hernia of the right side, and reduction was effected without opening the sac. The obstruction seems to have been relieved, but next day the hernia recurred; the patient afterwards died, and, although the return of the hernia was not the actual cause of her death, yet it was a source of anxiety, and might have been prevented by a curative operation.

This case opens the question whether, when reduction can be effected without opening the sac, a curative operation would not be an unjustifiable addition to the risks. But to continue with the question of recurrence, we find that when the neck of the sac is not ligatured the tendency of the hernia to recur may be very persistent. For example, a woman, aged 53, was operated upon for an inguinal hernia of the right side. The sac was

opened and the bowel replaced, but next day the bowel came down again and was again replaced, only to return on the following day. The sac also became highly inflamed and full of purulent fluid, and there was general peritonitis. Sometimes it is the omentum and not the bowel which comes down again into the unobliterated sac. For instance, the sac of an oblique inguinal hernia of the left side was opened for the reduction of its contents, which consisted of bowel and omentum. These were replaced, but the omentum returned and protruded from the wound. There was also suppuration in the sac, but the man recovered. As might be expected when the hernia recurs, the loop of intestine which comes down into the unobliterated sac is not always that which was originally strangulated. A woman, aged 56, was operated upon for a right femoral entero-epiplocele which had been strangulated for four days. The strangulated bowel was deeply congested and covered with lymph. It was returned into the abdomen, but the patient sank, and it was afterwards ascertained that a fresh loop of ileum had entered the hernial sac, where it lay free from strangulation; whilst the damaged loop was within the abdomen, close to the femoral ring. In reading the notes of the examination of similar cases it is by no means an infrequent thing to find it noted that the sac contained a fresh loop of intestine.

I will now proceed with another accident which has already been incidentally mentioned, namely, *suppuration* within the sac. But first it is to be remembered that this accident is not always attributable to the operation. For instance, a woman, aged 58, came in with an inflamed femoral hernia of the right side. The tumour gradually increased in size, and the skin over it became red and œdematous, with clear signs of fluctuation. The sac was opened, and found to be full of pus, together with an adherent coil of intestine. The patient recovered, and left the hospital wearing a truss.

Or, again, in the following case the suppuration in the sac may not have been altogether due to the sac having been left behind, as will be seen from its history. A young man of 19 was operated upon for a strangulated inguinal hernia of the right side. The sac was opened, and afterwards there was orchitis and suppuration, but the patient was suffering from gonorrhœa. More often, however, suppuration of the sac followed operations, and, as the cases show, does not seem to have been a very dangerous complication. Inasmuch as the lower testicular part of a congenital inguinal sac cannot be removed, I am accustomed to irrigate it very freely with perchloride of mercury lotion (1 in 2,000), and afterwards sew it up with a continuous suture. Sometimes fluid collects in it, but I have never seen this kind of "hydrocele" give any trouble, and it soon subsides.

Sloughing of the sac is another complication which is to be apprehended, especially after rough taxis, and quite apart from any ligatures having been applied to its neck.

Should a patient survive the immediate danger of the operation of kelotomy, and should no attempt have been made to perform a curative operation, there is still danger of the hernia *relapsing*. There seems to be an idea abroad that after hernia operations the sac becomes obliterated, and that, therefore, when the rupture forms again it manufactures for itself an entirely new sac. That this belief is far from true is easily proved by reference to cases of congenital inguinal hernia.

But when the hernia relapses a long time after kelotomy, then it seems not unreasonable to suppose that sometimes a fresh sac may have been formed. For instance, Mr. Thomas Smith performed a successful herniotomy upon an old woman, aged 70, for a strangulated femoral hernia. The rupture, which had existed for forty years, had been operated upon twenty years previously for strangulation.

It is curious to note the way in which these patients go from one hospital to another. Another woman had been operated upon by Mr. Hutchinson at the London Hospital, and when, some time after, the hernia relapsed, she came to St. Bartholomew's, where it was reduced by taxis.

The foregoing cases illustrate the dangers of relapse after ordinary kelotomy, and it may be assumed that a curative operation would have prevented many of these accidents. But it is not to be supposed that all could have been prevented, because, as I have shown in my Hunterian Lectures on Hernia, in older people hernia is frequently due to prolapse of the mesentery. Now, when owing to this prolapse the excursion of the intestines out of the abdomen is many inches more than normal, and when the abdominal contents have gravitated into the lower part of the abdomen, it seems unreasonable to suppose that an operation on the aperture in the abdominal wall could always resist unusual strains. However, the curative operation is, under ordinary circumstances, no addition to the dangers of kelotomy, but quite the contrary ; and, if it does not cure, it at all events prevents immediate recurrence of the hernia, suppuration in the sac, sloughing of the sac, prolapse of the sac, and infection of the peritoneum, should the wound have become infected. Indeed, the cases which have been mentioned seem fully to justify the present line of practice amongst surgeons.

Nor ought curative operations to be restricted to femoral and inguinal herniæ. This applies with especial force to congenital umbilical herniæ, for these, as is well known, are particularly dangerous when strangulated.

It may not be amiss to remark that relapse is more especially to be feared in cases of double or multiple hernia, because the existence of several herniæ is indicative of prolapse of the mesentery. In such cases as these it seems improbable that the abdominal wall could be made strong enough to resist the pressure of the prolapsed intestines; therefore in them obliteration of the hernial sac and suture of the abdominal wall should be followed by the wearing of a truss.

In conclusion I ought, perhaps, to refer to the operations of radical cure which may be performed after kelotomy. But so much has been written and said upon this subject that this may be done very briefly. First, however, it is not to be expected that any of these procedures can be undertaken without danger unless perfect aseptic precautions are used and attained, and too much stress cannot be laid upon the importance of sterilizing the sponges, ligatures, instruments, and materials used in the operation.

No operation for radical cure can be relied upon which does not achieve two things: first, absolute obliteration of the sac without leaving a depression at its opening into the peritoneum; and secondly, the repair of the abdominal wall. Macewen's operation fulfils these conditions, and, as he and others have shown, can be practised with safety.

However, I have found that as regards the treatment of the sac it has not always seemed wise to fold it into a pad, as Macewen recommends. In femoral herniæ the sac is sometimes in such a condition that it has been impracticable to convert it into a pad, and therefore I myself have usually dealt with it as follows. Its neck is transfixed and then encircled with a long and moderately thick silk ligature, and securely tied. Next the ends of the thread are passed separately, about an inch apart, through the abdominal wall, well above Poupart's ligament, so that when they are pulled upon the neck of the sac ascends the crural canal and is fixed by tying the ligature. Afterwards Hey's ligament and the public portion of the fascia lata are brought together by suitable sutures, and the wound closed after having been irrigated with perchloride.

The operation for the cure of inguinal hernia is more difficult to perform, and is now described in all the recent works on operative surgery. However, before undertaking its performance, it is highly desirable to take opportunities to practise its several steps. Macewen's operation, as regards its difficulties, seems comparable to staphyloraphy, and requires a good knowledge of anatomy and considerable dexterity for its efficient execution.—*The British Medical Journal, July* 18, 1891, *p.* 116.

55.—ON THE TREATMENT OF HERNIA BY MEDIAN ABDOMINAL SECTION.

By Lawson Tait, F.R.C.S.

In *The British Medical Journal* in September, 1883, I said, "I have an impression that the radical cure of hernia, other than umbilical, will, by-and-bye, be undertaken by abdominal section. I am not sure but that it will be extended to operations for strangulated hernia. A few weeks ago I removed an ovarian tumour from a woman with a femoral hernia, in which intestine was adherent. It was a very easy matter to undo the adhesions, and, by means of a handled needle and a silk thread, to obliterate the ring in a manner which, I am sure, no operation from the outside could have effected. So much can be done through a two-inch incision, that if I should ever be called upon again—as I very rarely am—to operate on a strangulated femoral hernia, I believe I shall proceed by abdominal section, and complete the radical cure of the protrusion at the same time that I relieve the obstruction."

I may now briefly state the arguments in favour of my proposal, and at the same time endeavour to meet several self-evident objections to it; so let me say that the first argument I shall make use of is that a perfect and accurate diagnosis will be made just so soon as the finger in the abdomen reaches the internal aperture of the canal, either inguinal or femoral, through which a protrusion is supposed to have been made; and this accurate diagnosis is, I may say, a matter of the utmost importance. Suppose the case should turn out not to be one of hernia but one of hygroma or one of the many conditions which may simulate hernia, no harm is done if the abdominal section is properly carried out, and the patient will not be one bit the worse. If the case be one of protrusion, I think there cannot be a doubt that replacement of the viscera can be far more safely effected by traction from within than by pressure from without, and if the traction be gentle and cautious it is certain to be effectual, because I have never yet in an acute hernia seen the intestine adherent. In a chronic case, on the contrary, the intestine may be adherent, although in the great majority of cases the irreducible elements of the protrusion consist of adherent omentum; but a piece of adherent omentum protruding through the aperture means that the hernia is practically incurable until its reduction has taken place. It may be, however, that the sac will have to be opened in order that the adhesions should be undone; but that will be less and less likely as experience in this proceeding grows.

Ordinary adhesions are very easily undone by traction. The pieces of omentum which have been removed by traction from their sites of adhesion bleed, but the sites themselves do not bleed, all the vascular supply being from the omentum. It will only, therefore, be necessary to examine the ends of the piece of omentum which has been torn out of the sac and arrest bleeding, to be perfectly sure that everything is satisfactorily accomplished; but even if a secondary opening in the sac be found necessary the case will be very little complicated. The self-evident objection to the proceeding—that you have two openings instead of one—is of very little weight, for the small second incision which is required in the abdomen cannot, if made properly and properly secured, by any possibility be the seat of subsequent protrusion.

Further, if it be necessary to add to the abdominal section an opening into the hernial sac for the purpose of undoing adhesions, the replacement will be accomplished without any enlargement of the peccant aperture; and thus the first of my cardinal principles will be complied with. So also will be the second principle, for by the extension of my method no interference with the hernial sac in the way of its removal will be required; and thirdly, the operation will be found greatly simplified in cases of incarceration, for any objectionable contents of the sac may be easily cleared out and the condition of the gut accurately ascertained. Should it be necessary, from the condition of the intestine, to make an artificial anus, the proper place will be the central incision, and not through the unyielding ring in the groin.

An additional argument for this proceeding is that it will render absolutely impossible those unfortunate cases which end fatally by the non-discovery of certain well-known complications, such as double strangulations, and strangulation by the returned neck of the sac. In fact, in this way mistaken and incomplete operations will be completely obviated. It may yet be found, of course, that for all cases of incarceration with obstruction this method of proceeding will not be capable of suitable adaptation, and I do not put it forward for the purpose of completely replacing the direct method of operation, but there can be no doubt that it is applicable in a very large number of cases, and in the uniform adaptability of this method for the combination of the relief of strangulation and the radical cure of hernia will be found the chief argument for its adoption as far as it can be extended.

Let us suppose now that such an operation for the relief of strangulation and the return of the protrusion is completed, and it is desired at once to proceed with the radical cure of the hernia, the following simple method may be adopted, and this

description applies equally to all cases where the only object is the radical cure of a chronic irreducible hernia.

Two common glover's sewing needles armed with one piece of salmon silkworm gut are fastened in some convenient needle holder at a very slight angle to one another, so that their points completely coincide, and can be made to enter through one hole in the skin. The left forefinger covers or occupies the inner aperture of the sac, the needles are made to enter from without, and are then separated. The outer needle is then made to dip deeply into the external column of the ring, and the inner needle similarly into the inner column. The needles are then pulled out through the central incision, and as many sutures as may be thought desirable are inserted in this way. When the insertion of the stitches is completed, they can be tied from within and cut short. The abdominal wound is then closed properly, and the operation is over.

I have in this simple way cured a large number of inguinal and crural hernias in women, and many of my cases go back so many years, that I am perfectly satisfied that the cure is complete and permanent, and there can be no question that the union is not merely a peritoneal one, but that the tendinous elements of the ring become fused in the closure. I have never operated upon a man, and, doubtless, in dealing with the male inguinal hernia, some device like that of Postempski would require to be introduced for the protection of the spermatic cord, and that ingenious contrivance is so effectual, that I have no doubt it would answer every purpose. In cases where a secondary aperture has been made, that is, through the walls of the sac, the introduction of these sutures is still easier, as it may be done with a handled needle, and the tying may be done from the outside, and the security of permanent union may be enhanced by a process of flap splitting.

In the *Lancet* of May, 1882, Mr. T. F. Chavasse describes a case of umbilical hernia in which he performed an operation something like this, based on the recommendation of Professor Annandale, for the relief of strangulation, but he did not return incarcerated omentum, and he made no attempt to perform the radical cure.

A very little reflection based upon experience will show that umbilical or other exomphalic hernias constitute a class by themselves, in which all apertures either for the relief of strangulation or for the radical cure, or both, should be made through the hernial sac, and not through an incision outside the constricting ring.

In July, 1886, a paper was published in *The British Medical Journal* by Mr. E. M. Ward. He says, concerning this method of dealing with hernias by abdominal section: "It appears to

me that the arguments in favour of a median abdominal incision infinitely outweigh any that can be argued against it. It makes the operation simple, easy, precise, and safe. There is no danger of wounding any large vessels or important anatomical structures ; the trifling hemorrhage is within view and absolutely under control ; the diagnosis is either verified or negatived at once without difficulty, and if it should prove to have been at fault the abdominal cavity may be thoroughly explored for other causes of obstruction. Besides this, the constricting band is much more easily reached and divided."

A paper by Dr. Maunsell, of Dunedin, published in 1887, came under my notice a year ago, in which he recommends that the radical cure of hernia should be accomplished by the intraperitoneal method. The absence of diagrams in the reproduction of the paper which I read made the operation seem to be extremely complicated, but perusal of the original paper, in which diagrams are produced, shows that the details of the operation in their essentials are very much those of my own, except that it is always performed by means of handled needles, and Dr. Maunsell uses silver wire instead of silkworm gut.—*The British Medical Journal, September* 26, 1891, *p.* 686.

56.—ON A METHOD OF PERFORMING INGUINAL COLOTOMY.

By F. T. Paul, F.R.C.S., Surgeon to the Liverpool Royal Infirmary.

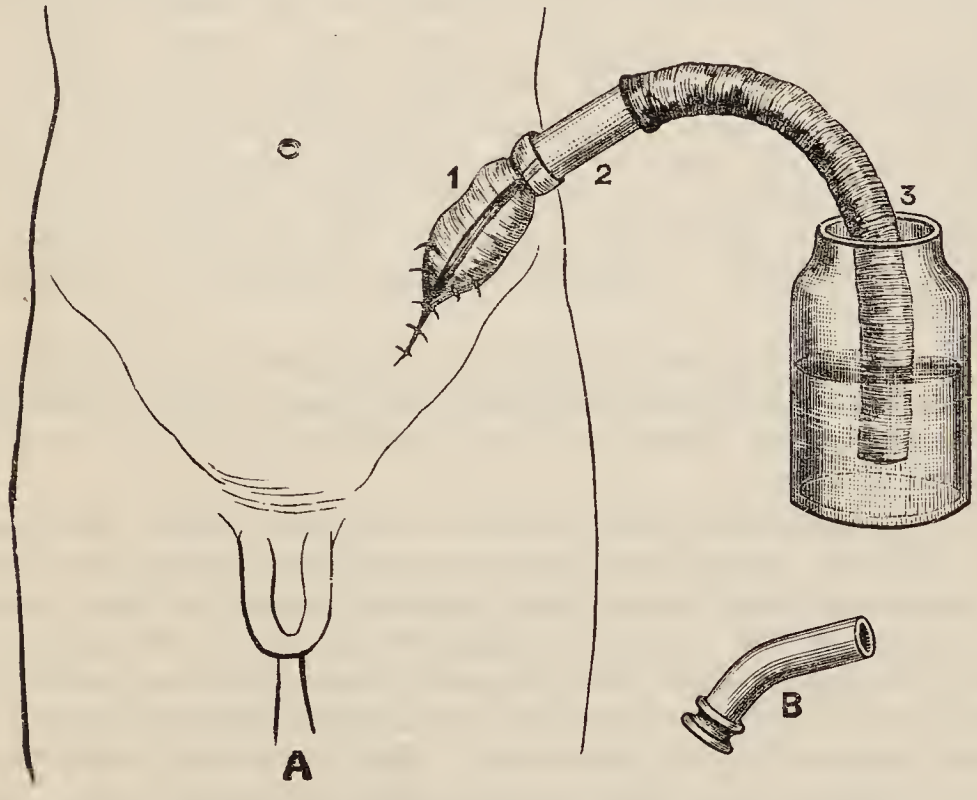
Only a few years ago lumbar colotomy was regarded as one of the most satisfactory of surgical operations. Its mortality was low, and the relief granted by it in some cases almost unequalled. Now the advocates of the inguinal operation give us a host of reasons intended to show how many may be the causes of failure in the lumbar operation. Strange that one practically meets with them so seldom. In my experience the only marked source of failure, in either right or left lumbar colotomy, has been the difficulty in completely cutting off the passage of fæces *per rectum* in some cases in which it was very important to do so. In the light of recent experience, I consider that when it is only necessary to open the bowel to relieve urgent distress the extra-peritoneal operation is the more prompt, safe, and suitable ; but that when it is desirable to divide the bowel, cutting off all communication with the part below, the inguinal operation is safer, easier, and better than Madelung's modification of lumbar colotomy.

The inguinal operation is undoubtedly easier to perform than the lumbar, but it has a source of danger from which the other is or ought to be free, and that is the danger of allowing fæcal discharge to bathe a wound directly communicating with the peritoneal cavity. So serious is this that the pioneers—Messrs. Harrison Cripps, Jessett, and H. Allingham—all counsel delay in opening the bowel until adhesion has taken place between it and the wound. Each has his own special method of performing the operation, but the variation is directed in each case chiefly towards the ultimate opening of the bowel without risk of contaminating the peritoneum.

The object of the present communication is to point out how, by a very simple plan, this desirable result may apparently be safely accomplished without the usual delay.

Case 1.—In February, 1890, Dr. T. Eyton Jones, of Wrexham, sent me a case of extensive cancer of the rectum, occurring in a man, aged 46.

Having ascertained that the full extent of the growth could not be determined previous to operation, I thought it best to cut off all communication with the alimentary canal above before excising the rectum. Consequently, on March 3rd, the patient was prepared for operation. An incision was made in



A, Diagram illustrating a method of performing inguinal colotomy. (1) The upper end of the divided sigmoid flexure brought out of the wound. (2) A glass tube tied into the bowel. (3) Rubber tube for conveying fæces away from the wound. B, Improved form of glass tube.

the left inguinal region, through which the sigmoid flexure was withdrawn. With the usual precautions the bowel was divided in the middle, the distal end invaginated as in Senn's operations, and returned into the abdominal cavity. Into the upper proximal end a glass tube of an inch in diameter was tied, its fore end being attached to a rubber tube to convey the fæcal discharge away from the wound. This piece of bowel was sewn to the edges of the wound by green catgut sutures passing through its musculoserous coats, and the rest of the wound closed with the same. About two inches of bowel projected beyond the wound, which was then dressed with iodoform and salicylic wool. The patient did remarkably well. Each day more or less motion passed through the tube, while the wound remained aseptic. After three days the projecting piece of bowel was cut away, good union having taken place, and in a short time a very satisfactory artificial anus resulted.

The rubber tube in the diagram was found to be inconveniently heavy, and was changed for a bag of jaconet filled with absorbent wool, which is preferable except for the first copious discharge of fæces in obstruction.

The patient was much benefited by the diversion of the fæces from the cancerous rectum, and was in somewhat better condition when three weeks afterwards he submitted to the second operation of excision of the entire rectum. This was performed on March 24th, after the manner recommended by Dr. Wm. Alexander. It was, of course, necessary to open the peritoneal cavity, but no harm resulted from this, and in six weeks he returned to Wrexham. He lived about twelve months after the first operation, the artificial anus continuing satisfactory throughout, there being no tendency to procidentia.

Case 2.—In February, 1891, my colleagues, Dr. Davidson and Mr. Bickersteth placed under my care a man, aged 57, suffering from cancerous disease at the junction of the rectum and sigmoid flexure.

On February 20th the patient was put under chloroform, the incision made, and the parts explored with the finger. It was at once ascertained that excision was out of the question on account of the extent of the growth and its attachments at the brim of the pelvis. Consequently the upper free part of the flexure was brought out of the wound, and treated as has just been described in the last case. This time wind only passed through the tube, the patient having suffered less from obstruction, and the bowels having been emptied by diarrhœa before operating. On February 24th the projecting portion of bowel was cut off and further sutures introduced. On the

26th the bowels were first moved by enema of warm water. On March 10th he was allowed up, and a week later was discharged.

Case 3.—On April 14th Mr. Bickersteth placed another case of extensive cancer of the rectum under my care. It was quite beyond the limits of excision, as the bladder was already affected. There was very little obstruction, but the state of the bladder called for complete diversion of the fæces from the rectum.

On April 20th, with Mr. Bickersteth's assistance, I performed inguinal colotomy, as in the previous cases, with the exception that the flexure being here very extensive it was thought advisable to excise eight inches of it. In this case repair was very slow, and there was a great want of plastic adhesion about the wound which suppurated. For this reason the glass tube was retained *in situ* for seven days, and before cutting off the projecting end of the bowel a curved needle was passed through it from one side of the wound to the other. This was done in case it might be retracted into the abdomen. The cut edges were then well sutured to the wound, and a warm water enema given, for in this case also nothing but wind had passed by the tube. There proved to be very little in the colon. From this time healing progressed slowly, and he was discharged well on May 20th.

These cases, I take it, are quite sufficient to show that the bowel bears very kindly what at first appears to be somewhat rough treatment. If it has the disadvantage of using the living intestine too much like a piece of hose pipe, it has the manifest advantage of not interfering with its function, whilst securing an aseptic wound. Besides colotomy there are other conditions in which this treatment might be useful. Thus, in cases of excision of the rectum, where the peritoneum has been freely opened, and a good deal of bowel pulled down, it would surely be safer to tie in the tube and carry the fæces clear of the wound. Also, in cases of excision of cancer at any other part of the large intestine, if it were found not to be practicable to reunite the bowel, the upper end could at once be brought out of the wound in this manner, and enterectomy under such circumstances ought to be but little more fatal than colotomy. It might also be worth putting this plan into practice as a temporary means of averting death when a patient is *in extremis* from internal strangulation. I think it might be done with much less immediate danger than opening a distended coil of bowel in the usual way, though there is the serious consideration that it would render a subsequent operation imperative to re-establish the continuity of the small bowel.—*The British Medical Journal*, *July* 18, 1891, *p.* 118.

57.—ON PROLAPSE OF THE RECTUM IN CHILDREN.

By J. R. Logan, M.B., Senior Assistant Physician,
Liverpool Infirmary for Children.

Prolapse of the rectum is a moderately common condition in the first two or three years of life. I find that we have at the Infirmary for Children about thirty-two cases per annum, and that among 26,000 patients it happened once in every 400. It occurs most frequently at the ages and at the times of the year when diarrhœa is most prevalent.

Varieties.—On clinico-anatomical grounds three varieties may be indicated.

The first degree consists simply in eversion of the anal ring—prolapsus ani ; the second includes severer cases, in which the bowel presents to the extent of $\frac{3}{4}$ of an inch up to about two inches ; and the third class, in which are to be placed the severest and most dangerous cases, the protrusion attaining the length of about 3 or even 4 inches, and this in its shrivelled or contracted condition represents a considerably greater length of the large bowel.

Causation.—The most frequent cause of the first variety is constipation, which may also give rise occasionally to such cases as are classed in the second group. Diarrhœa may also cause the simple prolapsus ani, and while diarrhœa is generally the exciting and maintaining cause of cases in the second group, it is, in my experience, invariably so in all the worst cases.

Laxity of the anal sphincter is the result and not the cause. The levator ani is not in any way concerned in the matter. In severe diarrhœa there is general enfeeblement of the intestinal wall, with irregular, but often most forcible, contractions. One may find one of the strong muscular bands of the rectum, one of the higher sphincters, firmly contracted, and at this point the invagination will commence when next the bowel is protruded.

Rare causes of prolapse are difficulty of micturition and stricture of the rectum.

Diagnosis.—I have never known polypus of the rectum cause prolapse, but I have often found it mistaken for that condition; but with careful examination the error is impossible. In the severer cases, in forming our diagnosis, it is well to remember that when there is a protrusion of 3 inches or thereabout, there are not only all the coats of the bowel extruded, but also a pouch of peritoneum ; and further, that the protrusion may not be a prolapse at all but an intussusception, and may even be the ileum which has passed through the ileo-cæcal valve, and is now presenting through the anus. In the case of intussuscep-

tion, the finger can pass through the anus beside the protruded mass, while in the case of prolapse the finger will be arrested at or close to the sphincter.

Treatment.—In the first place, if the protrusion does not spontaneously return, it must be gently replaced. If the condition is caused by constipation, this must be attended to, and in children of two or three years of age extract of malt will be found generally very efficient. If the cause is diarrhœa, that must be met with appropriate measures. When diarrhœa has been severe, prolonged, and accompanied by severe straining, when the prolapse has been frequently down for two or three weeks, then the case requires very careful attention.

In the second order of cases there is seldom any difficulty in returning the bowel, and before doing so it will be well to wash its surface with a strong solution of alum or to dust it with tannic acid in powder. The application of a pad and a T bandage can only be useful where there is a small prolapse, and strapping the opposite gluteal folds together can only do good when the invagination begins a short distance above the anus. In such cases these measures are useful. In the worst cases, in which, for example, there is a protrusion of say 3 inches, in which there is frequent evacuation of the bowel and constant diabolical straining, the pad or the strapping is worse than useless. In these cases, we often find that for a week or ten days the bowel has never been returned, and its surface is now inflamed, and perhaps in parts tending to slough. To return the bowel may be difficult. I have found that by passing a small rectal bougee into the lumen one is considerably assisted. It may be necessary to administer chloroform in order to effect reduction. Should the bowel easily return, its surface should be treated with astringents, and the application in longitudinal lines of nitrate of silver is certainly useful. In severer cases the actual cautery has been employed to make these lines, and with satisfactory results. In very bad cases, wedge-shaped pieces of mucous membrane have been removed, the bases being at the anus. The severed edges are sewn together, and a successful issue has resulted.

I am not prepared to commend this proceeding, as I believe that, with the severe straining so constantly present, it is very likely that the bowel would still be forced down, and the stitches torn through, when the latter condition would be worse than the former.

In returning the bowel in some of these very bad cases, and following it with the finger, I have been struck with the facility with which the finger retains the bowel in position, and with the singularly slight pressure upon the finger, even when the child was doing its worst in the way of straining. It occurred

to me that if something could be got to take the place of the finger, while permitting the fæces to pass, one would have a successful means of dealing with these cases. Accordingly, in two of the worst cases I have ever seen, and in which the children were emaciated and exhausted from diarrhœa and rectal irritation, after returning the bowel, I passed in a lithotomy tube and kept it there, protecting the anus by a circular pad of lint. The result fully satisfied my expectations. In one case the tube was retained for about three days, and in the other it had to be kept in for about a week. In place of the lithotomy tube I have procured a perforated celluloid tube $\frac{3}{8}$ inch in external diameter, 4 inches long, and provided with an oval flange at the lower end, by which the apparatus can be retained in position. I venture to think that such an instrument will be found safe and of much service in the severest forms of prolapse of the rectum, for which class only I recommend it. In three or four days I believe it will be found that its use may be dispensed with. While the rectum is being attended to mechanically, medicine and dietetic treatment must not be neglected. Small doses of mercury with chalk, and above all tincture of opium in fair doses often repeated, should be given. Of the tincture $\frac{1}{2}$ minimum may be given to a child of two years, the directions being every hour or two hours *while the child is awake.* Of course the effect should be watched. It will be well also to confine the diet to peptonised milk for a few days, and with these combined measures I believe we may successfully treat the very worst cases of prolapse of the rectum.—*Liverpool Medico-Chirurgical Journal, July*, 1891, *p.* 380.

58.—ON THE CHOICE OF AN OPERATION FOR INTERNAL PILES.

By Herbert W. Allingham, F.R.C.S., Surgeon to the Great Northern Central Hospital.

The four chief modes of operation on piles are :—1, The ligature with incision ; 2, Crushing ; 3, The clamp and cautery ; 4, Excision.

A few general observations are necessary. For all practical purposes piles may be divided into two great divisions. The first group includes those which come down at stool, and those which are almost always in a state of prolapse and bleed profusely on each action of the bowel. As a result of this patients become anæmic and in ill-health. Hence the operation to be chosen to remove these piles should be one that can be performed as quickly as possible, in order that little blood

should be lost at the operation, and that there should be the minimum amount of risk of secondary hemorrhage. These requirements are fulfilled by the ligature which can be applied in five minutes or even less, and is practically free from any danger of after hemorrhage.

The second group comprises those piles which may be chiefly regarded as causing inconvenience, for they frequently come down and prevent the patient from taking active exercise, or even from walking or riding with any degree of comfort. This is the main source of trouble, for these piles rarely bleed, and do not otherwise interfere with the enjoyment of good health. In these cases there is no necessity for urgent haste in operating, the great point is to select the least painful operation. The best modes are crushing, or the simple cutting off of the piles and picking up any vessels that may bleed.

1. The Ligature with Incision.—I have used this method in about 80 of 200 cases of internal hemorrhoids. The pile is drawn down by a vulsellum, and is separated with scissors from the muscular and submucous tissues upon which it rests. The incision is made at the junction of the skin with the mucous membrane, and is carried up the bowel so that the pile is left connected by vessels and mucous membrane only. A strong silk ligature is then tied as tight as possible at the neck of the pile, and great care is required in tying all the knots that are made, as many as three being advisable. The ligatured pile is then returned within the sphincters.

As stated above, this method is the best to use when the anæmic state of the patient, in consequence of his having previously lost much blood, renders it necessary for the operation to be performed as speedily as possible, and when primary or recurrent hemorrhage would be dangerous, if not fatal. It is excellently suited to piles which are very large and vascular, or are well-formed or inclined to be sessile rather than pedunculated. It should be applied for patients who have any tendency to cardiac or kidney disease, and when there is an atheromatous condition of the vessels. It is the wisest to use when the patients are old and feeble, in fact the ligature is the *safest* operation. Nevertheless, it has its drawbacks. The wounds, as a rule, take some time to heal ; there is much more pain after the operation and on the first motion of the bowels than there is after crushing or simple excision ; there is far more sloughing and suppuration until the ligatures have separated, and hence there is greater liability to some contraction.

2. The Crushing Operation.—This consists in drawing the pile by means of a hook into a powerful screw-crusher, which is tightly screwed up, and then cutting off the distal end of the pile. The crusher should be applied on the longitudinal aspect

of the bowel, and should be left on the pile for about two minutes. The power exerted is very great and completely crushes the vessels in the stump of the pile, thus preventing bleeding after it has been removed. This operation should be used when the piles are medium-sized and rather pedunculated, and in patients in good health, in fact in those classes of cases in which the piles are a matter of inconvenience and seldom bleed, and when they are secondary to some other rectal disease as fissure, polypus, &c. Its employment is contra indicated on the occasions when the ligature is most advisable, viz., when the piles are large and vascular, when the patient is distant from medical aid, and rapidity of operation is necessary, when previous losses of blood have caused anæmia, and when primary or secondary hemorrhage might have serious consequences. In fact, in bad cases it is not so safe as the ligature. However, in ordinary cases its advantages are very great. There is freedom from pain after the operation, retention of urine is of rare occurrence, suppuration is unlikely, there is little or no pain on the first action of the bowels, and recovery is usually rapid. After-contraction is not common.

3. The Clamp and Cautery.—I very rarely employ this operation, but the fact that it is in general use by some surgeons compels me to mention it. The pile is drawn into a clamp, the distal portion is cut off, and the stump within the clamp is cauterised till all the vessels are thoroughly seared. I have several reasons for not using the clamp and cautery except in a few special cases. Statistics show that it is quite six times more fatal than the ligature or crushing ; the burning gives great pain after the operation, as is the case with all burns ; hemorrhage is more likely to occur ; there is greater sloughing of the rectal tissues, more time is required for healing, and further contraction is common as with all burns. I only use the cautery (without the clamp) in cases of pure capillary piles, when there is no tumour but merely a very vascular localised area. When such an area requires cicatrisation to effect a cure, the simple cautery is very serviceable, but I have not lately seen a case in which its application was necessary.

4. Excision of Piles.—This is one of the oldest operations on record, and in suitable cases the *simple cutting off* of one or more piles is a sensible and satisfactory plan to adopt. It is best applied to one prolapsed pile, to the single perineal pile, so common in women, or to one pile which is complicated with fistula, ulcer, fissure, &c. As a rule, however, whenever a pile is cut off one or two vessels require clipping. It is, therefore, inexpedient to excise many piles, for there may be trouble in picking up the divided arteries. I have employed this method in about twenty cases.

The fact that I have used the crushing operation in rather more than half of these 200 cases must not be taken to mean that I am a pure partisan of that method. I strive to use the mode which is best applicable to the particular case. During some periods there may be what I might call a "run" of cases adapted to crushing; at other times the ligature may be found desirable in the majority of instances. A succession of less serious cases may occasionally be best met with by the use of simple excision; an indubitable "pile area" may demand the employment of Whitehead's excision but very seldom. Similarly with the clamp and cautery, and with other methods of cauterisation which I have forborne to mention. The most satisfactory and safest manner of treating the case in hand is the only criterion for the choice of the operation.

As a last word I may observe that very few of my cases were *really well* in under three weeks after the operation. I cannot agree with those surgeons who allow their patients to go about in ten days, for such a course is totally contrary to our experience of the treating of the same kind of wounds in other parts of the body, *e.g.*, a wound on the leg which is delayed in healing by a too early return from rest to the upright position. Doubtless, in many of these presumably rapid cures the wounds in the rectum are not really healed, and in the long run perfect recovery is retarded. A premature resumption of the ordinary ways of life may cause a great tendency to contraction; or, what is worse, troublesome and tedious ulceration may supervene and take months to heal.—*The Medical Press and Circular*, *July* 22, 1891, *p.* 79.

59.—ON EXCISION OF FISTULA IN ANO.

By A. S. Barling, M.R.C.S., House Surgeon to the North Staffordshire Infirmary.

Fistula in ano is one of those diseases which do not tend to spontaneous cure. Certain slight cases doubtless get well if properly dressed, but in the large majority operative interference is necessary for their relief. The almost universal practice is to lay the sinus open, at the same time dividing the sphincter, and then to pack the gaping wound in such a way as to ensure its healing from the bottom. This mode of treatment is, I venture to submit, neither so simple nor yet so uniformly successful as we are generally given to understand. To carry it to the desired end it is almost essential that the patient should be kept in bed, the treatment not infrequently lasting for some months. I have traced several ordinary cases of fistula after their discharge from hospital, and in almost all, the results have

been disappointing. The average history seems to be somewhat as follows :—The patient is operated on, and then dressed in hospital for a few weeks, during which time he makes rapid progress. He then begins to find the continuous rest irksome, and either on this account or because his bed is wanted he becomes an out-patient. His friends are instructed, or even shown, how to dress the wound, and he goes out. He attends for some time without making much improvement, and then is lost sight of. Some months elapse, when he again appears either very much in the same state as that in which he was last seen, or, worse still, with another fistula due to the bridging over of the wound. This is no fanciful picture, but one based on the careful observation of many cases. Such being the facts, the question naturally arises, Can anything be done to shorten the time of cure without endangering its efficacy ? Obviously the great drawback is that a large open wound is left to heal by granulation, and so must of necessity take a long time. Why should the wound be left open ? Is it not possible, after removing all the granulation tissue, to sew the wound up with deep stitches, as is done in plastic operations for ruptured perineum ? I have done this with very successful results, and will relate one recent case.

The patient was admitted into the North Staffordshire Infirmary, under the care of Mr. Alcock, suffering from a complete fistula, the external opening of which was $1\frac{1}{2}$ in. from the anal orifice, the internal about an inch up the rectum. I began the operation by thoroughly stretching the sphincter, dilating it first by means of a dilator and then with fingers until I could introduce my closed fist into the bowel, thus completely paralysing the muscle. I then slit up the fistula in the usual way. The granulating tract was cut and scraped away until two clean raw surfaces were obtained ; these were then brought together over their whole extent by four silk stitches, extending deeply into the tissues below the wound, so that the bottom of the wound should be closed as well as the part nearer the skin. The silk had been boiled, and was put in by means of a curved Hagedorn's needle. Nothing untoward happened. The stitches were removed on the tenth day, when the wound was found to have healed soundly by first intention. Now, here is a man who was well in less than a fortnight after this operation, who, I believe, under ordinary treatment would not have been cured for at least two months. Further, he had hardly any pain after the operation. The bowels did not move for a week, and the first motion, brought about by repeated small doses of cascara, was not painful. The success of the proceedings is very largely due to attention to the following details :—(1) Paralyse the sphincter ; (2) clear away all granulations ; (3) put the stitches

in very carefully so as to secure accurate coaptation of the surfaces over their whole extent; (4) use aseptic silk so as to guard against the possibility of stitch abscess. Doubtless many surgeons have done this operation, and I shall be disappointed if I do not learn that it was the common mode of procedure with Hippocrates, but as I do not at present remember to have seen it described I venture to call attention to it as worthy of notice.—*The Lancet, July* 18, 1891, *p.* 123.

60.—A NEW VIEW OF THE PATHOLOGY OF FISSURED ANUS, WITH A SIMPLIFIED TREATMENT BASED THEREON.

By Charles Ball, F.R.C.S.I., Surgeon to Sir Patrick's Dun's Hospital, Dublin.

Many authors have noted that painful fissures apparently commenced in the rectal sinuses, and also that at the lower portion of it there was what is called a small external pile, and have stated that for the cure to be complete this pile must be removed in addition to the usual operation for the cure of the fissure. These authors consider that the first cause is a longitudinal split from over-distension during the passage of a hard motion or an abrasion from some particularly hard fragment of fæces, and that the presence of a pile or little cutaneous tag at its lower portion is only an accidental complication. I believe, in a large number of cases, what happens is as follows: During the passage of a motion, one of these little valves is caught by some projection in the fæcal mass, and its lateral attachments torn; at each subsequent motion the little sore thus made is reopened and possibly extended, the repeated interference with the attempts at healing ends in the production of an ulcer, and the torn down valve becomes swollen and œdematous, constituting the so-called pile, or, as it sometimes has been called, the "sentinel pile" of the fissure. Most of us have experienced the little bits of skin torn down at the sides of the finger nails, popularly called "torments," and how painful they are when dragged upon. Now the torn down anal valve resembles closely this condition of the finger, except that in the former it is situated at the acutely sensitive anal margin, and subjected to the periodic strain of a passing motion; it is, therefore, not to be wondered at that the pain should be so excessive as to seriously affect the general health and render life miserable.

Let us see now how it was that the older operations proved so largely successful in the treatment of this disease, admitting the theory I have above alluded to as being correct. First as to dilatation, When the anus is widely stretched by the fingers beyond the limits of natural dilatation by the passage of a motion, the little valve is torn down beyond the extent to which it is torn in normal defæcation, and consequently rest is given to the ulcer, and healing ensues, the subsequent defæcation not reopening the sore. In the "torments" at the side of the finger, if the little piece of skin is forcibly torn down, although the process is painful, a cure results, just in the same way that forcible dilatation cures the anal ulcer. Secondly, complete or partial division of the sphincter, if carried down through this tag, relaxes each side so that the subsequent motions do not catch in it and reopen the wound, but most surgeons of experience in this subject have met with cases in which both dilatation and incision of the sphincter have failed ; and the advice given by many writers to supplement the operation by the removal of the so-called pile at the lower end of the ulcer is undoubtedly sound. I would, however, go a step further, and say that the removal of this little tag is all that is necessary, and that either the forcible dilatation or incision of the sphincter is uncalled for.

What I would recommend in these cases where the classic symptoms of painful fissure are present is as follows :—Do not subject the patient to the pain of extended digital examination, much less occasion him the torture of passing a speculum ; but, after having the bowels fully relieved by an efficient aperient, administer an anæsthetic, and dilate the anus with the fingers sufficiently to obtain a good view of the entire circumference of the muco-cutaneous junction ; then, if the symptoms have been characteristic, a little ulcer will almost certainly be found, and at its lower extremity the torn down anal valve sometimes greatly hypertrophied. All that is now necessary is to catch this in a forceps, and with a fine pair of scissors remove it by a V-shaped incision, so that nothing be left which can be caught by a passing fæcal mass. If there is any unhealthy granulation tissue in the ulcer this should be removed with the sharp spoon, and the surface well dusted with boracic acid ; the cure will then be as immediate and certain as when the little " torment " at the side of the finger nail is shaved off level with the skin. It is advisable after this little operation to examine carefully all the other anal valves, and if any of them are likely from their size and projection to be torn down and so form other fissures, to snip them off with the scissors.

The first case which directed my attention to the theory above detailed occurred two years ago. An otherwise healthy young

woman consulted me complaining of very severe pain after the bowels moved. So great was the pain that she postponed defæcation for several days, with the result that she was quite incapacitated for attending to her duties for several hours after the bowels moved. She was in no way a neurotic subject, and I am convinced that her suffering was extremely acute.

Upon superficial examination nothing was to be seen, but the left side of the anus was extremely tender to the touch, and any attempt to introduce the finger was attended with such pain and spasm that I did not persist in it, but prescribed an aperient, and the following day dilated the anus under ether, when a small ulcer rather triangular in shape was clearly seen ; the base of the triangle was below, and was formed of an œdematous little tag of cutaneous tissue, which I recognised as an anal valve. Catching this in a forceps and drawing it down tended to enlarge the ulcer, and the resemblance of this to the "torments" on the finger at once suggested itself. The treatment adopted was that which I have already indicated, and the cure was immediate and absolute.

Since then I have had nine other cases under treatment ; in all the piece torn down by defæcation was found, although in some it was small. In two of the cases, in addition to the treatment above detailed, I slightly incised the sphincter, as it was very rigid and contracted. This I did in deference to old tradition, and I now believe it was inflicting a useless, although trivial, injury on the patient. One of these cases had been twice operated on by other surgeons—once by incision, and once, I am informed, by the truly barbarous method of Maisonneuve, namely, gradually introducing the whole hand into the rectum, closing the fist, and then forcibly withdrawing it. What this heroic treatment failed to accomplish the little operation of snipping away the torn down anal valve surely effected. In another case, which had also been operated on before by incision, the bifid remains of the anal valve still caused an obstruction to the passing fæces, and so kept up the sore.

In conclusion, I would wish to point out that the cases to which my communication relates are the painful or intolerable fissures of the anus ; they are not to be confounded with the superficial cracks of the anal skin common in eczema and some other conditions, nor with the superficial ulcers met with in syphilis ; and they must also be distinguished from tolerable ulcers occurring wholly on the mucous membrane, which are frequently situated in the rectal sinuses, but which do not produce the characteristic symptoms.—*The British Medical Journal, September* 12, 1891, *p.* 583.

61.—ON SUBCUTANEOUS TENOTOMY OF THE SPHINCTER ANI IN THE TREATMENT OF FISTULA.

By G. A. Wright, F.R.C.S., Surgeon to the Royal Infirmary, Manchester.

The ordinary method of dealing with a fistula in ano by laying the track open is, though usually successful, a tedious and troublesome affair in regard to the after-management of the wound. The principles of the operation are first to quiet the restless contractions of the sphincter, and, secondly, to refresh the granulating surface and allow the wound to heal from the bottom. Attempts to shorten the process by suturing the fistula have been frequently made with more or less success.

In thinking the matter over it occurred to me that, as far as obtaining rest goes, it would be a much less severe method to divide the sphincter subcutaneously at a distance from the fistula, while, if the fistulous track were scraped out, its freshened walls would be brought into contact and healing would occur. I have therefore tried this method in a few cases, and, as I have met a measure of success, I am desirous that others should give my plan a trial also. The operation is a simple one. The left forefinger is passed into the rectum and the tip of the coccyx felt for. A sharp-pointed tenotome is then taken in the right hand and thrust through the skin about three-quarters of an inch to the left side of the middle line, just in front of the tip of the coccyx; the knife point is pushed onwards until it is felt by the finger in the rectum beneath, but not through the mucous membrane. The knife is then tilted, and, cutting towards the skin, divides the sphincter subcutaneously close to its origin from the coccyx. The fistula is then scraped out thoroughly with a sharp spoon, and some iodoform and boric acid applied with a firm pad and T-bandage.

The method is simple and less severe than the ordinary plan, and in uncomplicated cases, at any rate, is, I think, worth trying, since the subsequent dressing is simplified, and confinement to bed shortened. The sphincter might, of course, be divided subcutaneously at some other point, if preferred.

Out of nine cases, five succeeded, three failed, and one was lost sight of after ten days, but was then apparently well.—*The British Medical Journal, October* 31, 1891, *p.* 945.

ORGANS OF URINE AND GENERATION.

62.—ON THE USE OF PETERSEN'S RECTAL BAG AS AN AID IN SOUNDING FOR STONE AND IN LITHOTRITY WHERE THE BLADDER IS POUCHED OR SACCULATED.

By Reginald Harrison, F.R.C.S., Surgeon to St. Peter's Hospital for Stone.

Where the prostate is large and the posterior wall of the bladder considerably pouched or sacculated, as is often the case, it is not always easy to bring the point of a metal sound in contact with a stone which may thus be concealed. In this way a stone often escapes detection, whilst the searching for it, by reason of the elevation of the floor of the prostate, is not only thus rendered futile, but at the same time is frequently an extremely painful process. In the same way during lithotrity fragments of stone may become trapped in these spaces, and lead to the persistence of cystitis and the formation of another calculus. I have found the use of Petersen's rectal bag, distended after its introduction into the bowel with two or three ounces of water, extremely useful in turning out sacculated stones into the larger cavity of the bladder, and in preventing the lodgment of fragments during a lithotrity. By this means the depressed posterior wall of the bladder is brought up almost on a level with the prostatic urethra, thus facilitating the movement of sounds and other rigid instruments, and at the same time tending to turn any sacculation that may exist in this part, with its contents, so to speak, inside out. I have tested these points now on several occasions. About the time I was making some observations bearing upon this point I was seeing a patient from whose bladder on two occasions, at short recent intervals, I had removed phosphatic calculi of small size. The prostate was large, there was a considerable amount of residual urine requiring the use of the catheter, and the posterior wall of the bladder was pouched and irregular. As the relief following each of these operations was only very temporary, and the urine was most offensive by the large amount of blood and muco-pus it contained, it seemed probable that there was more calculus in the bladder than could be got at in the ordinary way, and I thought it likely that some form of cystotomy, which would admit exploration of the bladder with the finger, with subsequent drainage, might yield more permanent results. Wishing to avoid this, and considering it possible that a stone might be

lodged in a sacculus, I introduced Petersen's bag, as used in supra-pubic cystotomy, and turned out into the general cavity of the bladder a phosphatic stone, having a diameter of an inch and a half, which was readily crushed and evacuated in the ordinary way. The ease with which the manipulations both with the lithotrite and the evacuating catheters were carried on compared most favourably with the two previous occasions. It is now nearly four months since the last operation; the patient remains quite well, and the urine is normal. Previously to this last operation the patient could not sit down with any comfort, by reason, I presume, of the pressure of the fixed stone on the prostate. He can now dispense with the catheter, and as the amount of residual urine does not exceed an ounce, I conclude the sacculation, having once been properly emptied, is becoming less. However, he takes the precaution of washing out his bladder every day with an antiseptic. I do not see how I could otherwise have removed this stone without opening the bladder, or without the use of the lithotrite in a manner which I should deprecate.—*The Lancet, March* 14, 1891, *p.* 597.

63.—ON THE PRESENT POSITION AND SCOPE OF LITHOLAPAXY.

By P. J. Freyer, M.D., Surgeon-Major H.M. Bengal Army, and Civil Surgeon, Moradabad.

My paper, entitled "Recent Experiences in Surgery of Stone in the Bladder: 100 Litholapaxies and 32 Lithotomies" (*The British Medical Journal, October* 12*th*, 1889), brought down the record of my operations for stone in the bladder—553 in number by all methods—to the middle of April, 1889. During the period that has elapsed since that time down to the end of February, 1891, out of 168 cases of stone in the bladder which have come under my treatment, in patients of all ages from 2 years to 90, no fewer than 165 have been dealt with by litholapaxy.

Sex and Age: Duration of Treatment. There were amongst these 165 litholapaxy cases 99 adults—namely, 96 males and 3 females—and 66 male children, or lads up to the age of 15 years. The average age of the adult males was $51\frac{3}{4}$ years, varying from 18 to 90; that of the male children $7\frac{1}{4}$ years, varying from 2 to 15; and that of the three females $52\frac{1}{3}$ years. The average number of days spent in hospital or under treatment (in case of patients in private practice) was, in the case of adult males, 6, varying from 2 to 28 days; in the case of male children, $5\frac{1}{2}$ nearly, varying from 2 to 21 days; and in

the case of females, 4 days. It should be mentioned, however, that in most instances the patients were kept in hospital, one, two, or three days more than was absolutely necessary, merely as a precautionary measure, and for purposes of observation. In no one case was the patient allowed to leave hospital till he had completely recovered.

Weight of Calculi.—The average weight of the *débris* of calculus removed was in adult males 242 grains, varying from 3 grains to 3 ounces and 1 drachm; in children 108 grains, varying from $2\frac{1}{2}$ grains to 3 ounces and $2\frac{1}{4}$ drachms; and in women 435 grains. The weights here given are those of the *débris* when thoroughly dry.

Recurrent Stone.—These 165 litholapaxies occurred in 164 different individuals, operations Nos. 388 and 449 having been performed on the same person. On May 7th, 1890, I removed from him a small phosphatic calculus, weighing 4 grains; he remained perfectly well for three months, when symptoms of stone again set in, and on December 8th, 1890, I removed a second stone of the same composition, weighing 95 grains. Amongst these 165 cases of litholapaxy there were, in addition to the case above described, six other instances of recurrent stone—two after lithotomy and four after litholapaxy. Cases 336, 404, and 426 had been operated on by me two and a half, seven, and two and a half years previously; and in Case 412 litholapaxy had been performed by another surgeon one year and a half before. All these patients had remained well and free from urinary symptoms for long periods after the first operation, so that the second calculus in each instance had no direct connection with the first.

Second Sittings.—In my previous writings I have laid great stress on the necessity of removing the whole of the stone at one sitting; 161 out of the 165 operations now under consideration were completed at a single sitting. It will, however, be found occasionally that a last fragment will sometimes evade detection. This is, undoubtedly, a weak point in the operation; but it is a weak point which sinks into insignificance when compared with the advantages with which the operation is attended. Of the four instances in which a second sitting was necessary, in three a fragment was undesignedly left behind. In all three cases the fragment revealed itself next day by the pain, stoppage of water, and other symptoms attendant on its presence in the bladder. In Cases 309 and 337 the fragment was removed, and in each instance the patient made an uninterrupted recovery. In Case 451 the fragment was also easily removed, but the patient died. In the fourth case the operation was designedly divided into two parts.

Complications.—Amongst the 165 cases of litholapaxy there were several instances in which stone in the bladder was complicated by the co-existence of enlargement of the postate or of urethral stricture. Cystitis was also a not uncommon complication, and in some instances the urine was fetid. Yet special treatment for this latter condition was rarely necessary, the removal of the calculus—the cause of the complication—being, as a rule, followed by a spontaneous cure of the cystitis. There were many other complications, such as disease of the kidneys, dysentery, piles, prolapse of the bowel, &c. ; and some of the cases were almost moribund when they came under treatment. Yet no case was rejected, the 168 cases of operation which form the subject of this paper being the only instances of vesical calculus that came under my treatment during the period under review. There were besides several cases of impacted urethral calculus, in five of which urethrotomy had to be performed.

Prostatic Enlargement.—In cases in which the presence of stone is complicated by enlargement of the prostate, I frequently find that there is considerable bleeding, the result of the passage of the instruments. Great care is necessary in such cases to see that all the fragments are removed, for they frequently get entangled in clots of blood in the bladder, which are sometimes with difficulty removed by the aspirator. Several washings are advisable after all fragments seem to have been removed.

Anæsthetics.—As a rule the patient is, of course, anæsthetised during the performance of litholapaxy. Latterly, however, I have, in suitable cases, performed the operation without the use of any anæsthetic.

Female Cases. — There were, as already mentioned, three females in this series. One of them was seven months gone in pregnancy at the time of operation. This case shows that litholapaxy may be successfully undertaken in the last months of pregnancy without fear of causing miscarriage. The chief, in fact I may say the only, difficulty I have ever experienced in performing litholapaxy in the female, arises from the difficulty of retaining water in the bladder both during the crushing of the stone and the aspiration of the fragments. This difficulty I have now quite surmounted by getting an assistant to place the fore and middle fingers in the vagina, and press the lower lip of the urethra against the lithotrite or cannula, as the case may be—a manœuvre which prevents the water flowing out beside the instrument.

Deaths.—There were, as I have already stated, three deaths amongst this series of 168 operations for stone in the bladder. *Case 1*, Peritonitis. *Case 2*, Old Age ; Exhaustion. *Case 3*, Senility ; Pneumonia.

Litholapaxy in Male Children.—When, in 1885, Keegan first showed that Bigelow's operation was capable of successful extension to the case of male children, I lost no time in procuring the necessary instruments, and applying the operation in such cases. In two papers I placed before the profession full details of 49 cases of litholapaxy undertaken by me in male children, or boys below the age of puberty. Since then 67 males of 15 years and under, suffering from stone, have come under treatment, and in 66 of these I have performed litholapaxy—in all, with complete success. In only one instance was it necessary to have recourse to lithotomy (suprapubic). The greater my experience of litholapaxy amongst male children becomes, the more I am fascinated by this operation. Though the average number of days such cases were kept in hospital was $5\frac{1}{2}$ as a rule, these little patients may be seen playing about the day after the operation, perfectly happy, and untroubled by urinary symptoms of any kind.

Amongst this series there were two little patients of $2\frac{1}{2}$, four of $2\frac{1}{4}$, and one of 2 years respectively, from whom calculi, varying in weight from $2\frac{1}{2}$ to 80 grains, were removed by litholapaxy, and I have previously recorded a case of a male child, aged $1\frac{1}{2}$ year, from whom I removed a calculus weighing 3 grains by this operation. It is astonishing the facility with which a No. 6 cannula will pass through the urethra of a child of this age. In this connection it will not be amiss to mention that on June 7th, 1889, a child aged 9 months, was brought to me with symptoms of stone, but in whom no stone could be found. In this case I passed a No. 6 cannula easily, and washed out the bladder by the aspirator for diagnostic purposes. Had there been a stone I could have removed it by litholapaxy readily. Thus it will be seen that with the suitable instruments now available, litholapaxy can be successfully employed in patients of the most tender age.

Cases in which Cystotomy or Lithotomy was performed.—Amongst this series of 168 calculous cases there were only three instances in which I was unable to perform litholapaxy; and, strange to say, they were all three of the same nature—calculi of medium size, lying partly in the bladder and partly impacted or sacculated in the prostatic urethra, from which position they could not be by any means displaced.

Such, then, are my most recent experiences in the surgery of stone in the bladder. There are two very important lessons to be learnt therefrom :—

(1) That litholapaxy is almost universally applicable to all cases of vesical calculus, as is clearly shown by the fact that I have been enabled to perform this operation in 165 out of my latest 168 cases of stone, occurring in both sexes and in all ages

and conditions. During 1890, 106 patients suffering from stone came under my treatment, and litholapaxy was performed in one and all of these, with one death.

(2) That the dangers which we anticipated from the extension of litholapaxy to the case of male children were purely imaginary, and had no foundation in fact, as is fully proved by my having now performed this operation in 115 males below the age of puberty without a death, and in all with complete success. —*The British Medical Journal, May* 9, 1891, *p.* 1005.

64.—ON THE RADICAL CURE OF HYDROCELE BY EXCISION OF THE SAC.

By F. A. Southam, F.R.C.S., Surgeon to the Manchester Royal Infirmary.

In *The Lancet* of September 10th, 1887, and October 26th, 1889, I have recorded seven cases of hydrocele treated by excision of the sac, and also directed attention to the favourable results which follow this method of radical cure. The three cases mentioned below, which have recently been under my care, are good illustrations of some of the conditions in which this treatment is especially valuable. In Case 1 the hydrocele was of the variety known as "multilocular," being composed of a number of separate cysts, and, therefore, not likely to have been cured by injection. Cases 2 and 3 would also have been unsuitable for treatment by injection, for in each the sac wall was so thick and rigid that it was incapable of collapsing after the evacuation of its contents by tapping, consequently a large thick-walled sac remained, which was best excised, for if treated by the alternative method of radical cure—viz., by "incision"—its obliteration by a process of granulation would have been a tedious and uncertain mode of healing. In all three cases excision of the sac, which for reasons given in the papers above referred to I believe to be far preferable to "incision," was followed by the most satisfactory results.

Case 1. Multilocular hydrocele; excision of sac; recovery.—F. E——, aged forty-three, sent by Dr. Blayney of Middleton, was admitted on February 18th, 1891, suffering from a hydrocele of the tunica vaginalis, which had been present for several years, and had been tapped twice; on the first occasion about eight ounces of clear fluid had been evacuated, but on the second only a few drops came away, and there was no diminution in the size of the swelling. As he was anxious to have a radical cure performed, and did not wish to run the risk of an unsuccessful injection, it was resolved to excise the sac.

The operation was performed on February 20th. On laying open the sac of the hydrocele the cavity of the tunica vaginalis was found to be divided by delicate septa into a number of compartments, some quite distinct, others communicating with one another. The tunica vaginalis having been separated from its connections with the scrotal tissues, the whole of the parietal layer was removed by dividing it close to its reflection on the testicle and cord. All bleeding having been carefully arrested, the wound was closed, no drainage being employed. Repair took place without any suppuration ; the patient was up on the twelfth, and left the hospital on the nineteenth day after the operation, the wound being firmly healed.

Case 2. Hæmatocele after tapping a hydrocele ; previous unsuccessful injection with iodine ; excision of sac : recovery.—W. S——, aged twenty-three, was admitted on April 27th, 1891, with a history of a hydrocele of the tunica vaginalis, which had been present for about ten years. It had been previously tapped twice, and once injected with iodine. The last tapping had been performed three days previously to admission, when six ounces of clear straw-coloured fluid were drawn off ; in the course of twenty-four hours the swelling reappeared, and the integuments covering it became dark and discoloured. As it was evident that the case was one of hæmatocele following the operation of tapping a hydrocele, it was resolved to lay open the sac, evacuate the blood, and at the same time perform a radical cure by excising the tunica vaginalis. The operation was performed on May 2nd. A free incision was made into the cavity of the tunica vaginalis, which was found full of sanious fluid and portions of blood-clot, and the sac wall, which was extremely thick and of dense fibrous consistence, was dissected out and removed up to its reflection on the testicle. The wound was then closed, a drainage-tube being brought out at its upper and lower margins. Healing quickly took place, and the patient left the hospital on the twenty-first day after the operation.

Case 3. Suppuration in tunica vaginalis after tapping a hydrocele ; excision of sac : recovery.—E. S——, aged sixty-two, was sent on February 16th, 1891, by Dr. Fletcher of Bury, suffering from a large hydrocele of twenty years' duration, for which no treatment had previously been adopted. On tapping the tumour, which was quite opaque, about a pint of thick brownish fluid was drawn off. After the evacuation of the fluid the sac wall could be felt through the scrotal tissues to be extremely thick, and of such rigid consistence that it was incapable of collapsing. On March 27th the hydrocele was tapped again, about the same quantity of fluid of a similar nature being removed. It gradually refilled, and subsequently

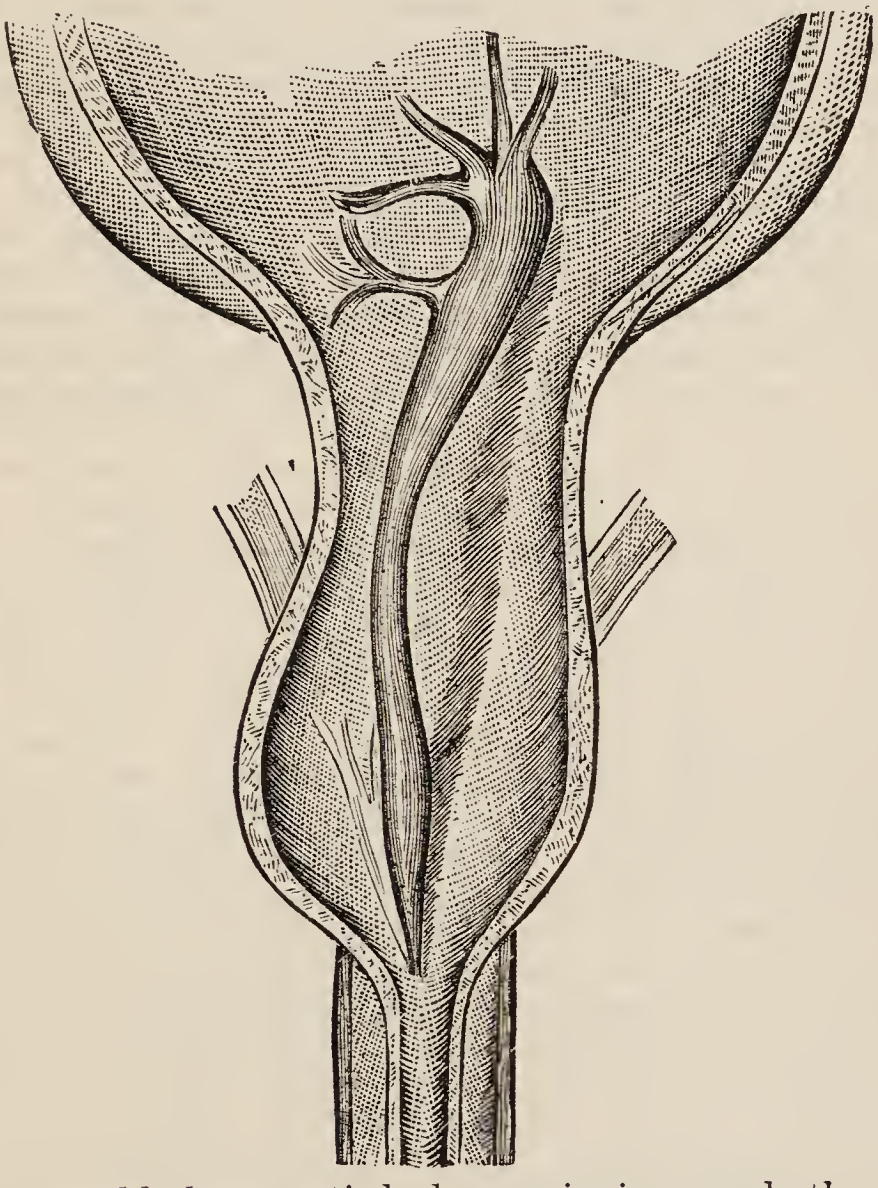
became extremely painful and tender. On April 25th he was admitted into the infirmary. The integuments of the front of the scrotum were in a gangrenous condition, and the adjacent parts were much inflamed. The same day a free incision was made into the cavity of the tunica vaginalis, which was full of pus ; the tunica itself, which was thickened and calcified, was dissected out, and as the testis, though healthy, was greatly atrophied, it was also removed ; a considerable portion of the gangrenous scrotal integument was also taken away. (The patient was the subject of an irreducible inguinal omental hernia on the same side. As the sac of the hernia was intimately adherent to that of the hydrocele, a radical cure was also performed on the hernia at the same time. A ligature was placed round the neck of the hernial sac as high up as possible, and the sac and omentum were then removed on the distal side of the ligature.) The margins of the upper part of the wound were then brought together by a few sutures, the lower part being left open on account of the inflamed condition of the scrotal tissues. Healing was somewhat slow, as there was some sloughing of the margins of the lower portion of the wound ; it was, however, sufficiently advanced to allow the patient to leave the hospital exactly a month after the operation, a small granulating surface still being present.—*The Lancet*, *July* 25, 1891, *p.* 171.

65.—A CASE OF POLYPUS IN THE URETHRA.

By W. H. Brown, F.R.C.S.I., Surgeon to the General Infirmary at Leeds.

J. W——, aged eighteen, was admitted on February 14th, 1891, complaining of incontinence of urine. He gave the following history of his trouble :—For the past two years and a half he has had difficulty in passing urine ; at times the stream would suddenly stop, and he was obliged to strain violently and bend double in order to void his urine. In the intervals between these attacks he was able to micturate without pain. All his pain was referred to the end of the penis. During the night he frequently passed urine whilst asleep. When walking about the urine was always dribbling away. Two years ago, whilst straining to micturate, he expelled about two ounces of bright red blood. He stated that on this occasion no urine was passed either before or after the blood. This was the only occasion that blood was seen. On admission the patient was a healthy looking boy, but appeared to be much younger than his real age (eighteen). There was no sign of hair on the pubes,

and the penis and testicles were of the size of a boy of nine or ten. There was a very tight phimosis. On his attempting to pass urine the stream was observed to be very small, and a curious balloon-shaped swelling appeared just over the urethra at the junction of the penis with the scrotum. In front of this there could be felt a small hard mass, not unlike the feeling given by an impacted calculus, but scarcely so hard ; this was thought to be due to hardened cicatrix. The balloon-shaped



swelling could be emptied by syringing, and the urine passed both backwards into the bladder and forwards out of the urethra. The patient stated that he had been in the habit of expressing the contents of this swelling, and this proceeding always relieved his desire to micturate. The urine was found on examination to be natural.

Feb. 16th.—The patient was put under ether, and I tried to pass a sound, but the phimosis was so tight as to render this

impossible. The prepuce was therefore slit up, when the sound readily entered the bladder. No stone was felt. Nothing more was done.

20th.—The boy looks ill and is vomiting, is very cold, and has the usual symptoms of uræmic poisoning. A very small quantity of urine was passed, and on examination this was found to contain one-fifth of albumen. The symptoms continued, and the boy died comatose the next day.

At the post-mortem examination a sound passed into the bladder without difficulty; a cicatricial-like mass was felt at the root of the penis. The organs were removed, and the urethra, having been slit open, was found to contain an elongated polypus-like body, about two inches in length. Its posterior attachment was to the prostatic region in the posterior wall of the urethra. The posterior extremity of the polypus was cone-shaped, with the base attached. From this attachment the body projected outwards along the urethra, gradually decreasing in size until its middle was reached, then expanding again to its anterior attachment. The portions between the attachments were quite free, and stretched after the manner of a bowstring in the urethra. That portion of the urethra corresponding to the extent of the polypoid mass was largely dilated, being of sufficient calibre to admit almost one's index finger; also its walls in this part stood permanently apart, so that the channel could be looked down, as it were. The bladder walls were somewhat thickened, and here and there roughened. One ureteral orifice was slightly dilated. The mucous surface of the urethra was quite smooth. The ureters were not dilated; their walls were thickened by submucous inflammatory changes (not caseous). The kidneys were extensively diseased, the left much more so than the right. The left kidney was about three times its natural size, and was completely converted into a many-chambered cyst, the outlines of each cyst indicated on the surface in such a manner as to suggest that each cyst had been formed by enormous dilatation of a pyramid and its extension outwards at the expense of the cortex. The cysts all inter-communicated so far as could be ascertained, and were completely filled with a thick, creamy, almost grumous pus, or an exceedingly homogeneous liquefied caseous material. There was no fetor or calculus formation. The appearance was undoubtedly not unlike that of tuberculous disease, but it was thought not to be really so in nature. The right kidney was in the same condition, but in quite an early stage of the change. Testes normal. All the other organs were healthy.

I have not been able to find a record of any case similar to the one just related. The position of the tumour and its twofold attachment are, so far as I know, without parallel.

The history of the case and the symptoms, with one exception, did not afford any ground for diagnosis, nor did the general appearance of the boy suggest that his kidneys were in such an advanced state of disintegration. The urine before the operation was natural. The symptom which might have perhaps guided us towards suspecting the presence of new growth was the one copious hemorrhage without the discharge of urine. Such bleedings being of frequent occurrence in rectal polypi, I am inclined to think that the tumour had its origin in the bladder and grew as the patient grew, being washed into the urethra by the outgoing flow of urine, and that its urethral attachment may have been due to inflammatory adhesions, the result of the patient's constantly handling the penis in his efforts to expel his urine. We failed to elicit any history of injury, of calculus, or of foreign body. It is, I think, only too clear that death was hastened and the shock occasioned by my slitting up the prepuce and passing the sound for the purpose of diagnosis, but I do not see how such an accident could have been either foretold or avoided.—*The Lancet, April* 18, 1891, *p.* 879.

66.—ON ACUTE PROSTATITIS AND PROSTATIC ABSCESS.

By William B. Ballou, M.D., Surgeon to the Bellevue Dispensary, N.Y.

In a rather large experience in urethral inflammation—viz., one thousand cases of urethritis in various stages, seen in hospital, dispensary, and private practice in the past five years—I have only observed three cases of prostatitis resulting in an abscess of the gland, though I have seen many of acute inflammation of a milder grade.

Pathology.—Acute prostatitis may and commonly does only involve the mucous lining of the prostatic urethra and the follicles and glands of the organ, though the changes are not very extensive and enlargement is not so marked as it is in the more severe form. In this mild form there is little or no swelling of the gland or the adjacent parts, and the condition usually terminates in resolution in a few days.

In the severer form the termination may be either in resolution or in prostatic abscess. In either case the prostrate is enlarged and projects into the rectum or urethra.

A lateral half or the whole of the gland may be inflamed, and if an abscess is developed it may also be unilateral or the whole gland may be the seat of a single abscess. Many distinct

foci of suppuration may also be present. Perforation and discharge may be either into the urethra, in the region of the veru montanum, into the rectum, or through the perinæum.

Ætiology.—The most frequent cause is extension of acute inflammation from the anterior urethra, although I have seen it in one patient after a profuse urethral discharge of *seven years'* duration.

It may also be due to cold, strong and irritating urethral injections, or traumatism, such as by the awkward or forcible use of sounds and other instruments, especially if the mucous membrane is in a state of inflammation. Venereal excesses have also been given as a cause, but they must act so very infrequently of themselves.

I have observed many examples of the milder form in the subacute stage of specific urethritis.

Symptoms.—A. *The Milder Form.*—In this there is first an increased frequency of urination attended with spasm and sometimes blood. There are pain, throbbing, heat, and fulness in the rectum, and the prostate may be felt somewhat enlarged, projecting into the anterior rectal wall.

The pain may be, and often is, reflected down the thighs and into the scrotum, and movements of the body are painful.

Sometimes complaint is made of difficulty in micturition, due to diminution in the calibre of the prostatic urethra from the congestion.

The temperature usually ranges from 100° to 101° F., and seldom higher except in the event of pus formation.

Resolution usually takes place in a few days.

B. *The Severer Form.*—In this the primary symptoms are much the same, although rather more exaggerated.

The pain is more intense and the swelling more marked, with a consequent difficulty in urination. The pulse and temperature are higher, the latter rising to 104·5° F. in a private case under my care for some time before and after the attack.

The swelling, throbbing, and pain in the rectum are more marked, and defecation may be painful or much interfered with. I have seen the fæces compressed to tape-like masses due to this swelling.

As the formation of pus is developed, all of the symptoms become intensified, movements of the body even are accompanied by agonising pain, more or less complete retention of urine may be present, and the temperature rises suddenly and is usually accompanied by rigours and sweating.

Rapid emaciation is often marked. These symptoms may suddenly abate by the abscess rupturing into the urethra or rectum, the condition then gradually disappearing and pus be discharged for some time.

Prostatic fistula or extravasation of urine from the prostatic urethra is very rare (Moullin, *Treves's System of Surgery*), owing to the fact that the surrounding tissues are very tense from cellular infiltration.

Prognosis.—In the mild form the intrinsic tendency is to rapid recovery.

The severer form, terminating in abscess tends to recovery when the proper diagnosis of abscess is made, but in cases where a rectal examination is not made, the condition may produce retention of urine. This may require the passage of instruments for its relief, and rupturing into the abscess cavity by force may take place. Septic infection may be set up and death result, as has been known to occur.

Treatment.—In all cases in the beginning absolute rest in bed is to be enforced whenever practicable and all local urethral medication stopped at once. A brisk purge at the beginning is advisable, although such an authority as Reginald Harrison looks upon this with marked disfavour. Laxatives should be given at intervals later on.

Alkalies—such as ten grains of citrate of potassium or five drops of liquor potassæ with tincture of hyoscyamus in drachm doses every three hours—I have found most efficacious in diminishing the pain and frequency in micturition. These should be kept up during the whole course of the disease. Local remedies to the perinæum are often of service, such as leeches, hot fomentations, fly blisters, or cantharidal collodion. Hot hip baths are often of benefit. Morphine internally or suppositories containing opium and belladonna are often required for the intense pain.

If retention of urine occurs, as it sometimes does, a soft catheter should be passed after the urethra has been irrigated with a mild solution of potassium permanganate. After evacuation of the bladder this should also be washed out.

Sometimes a metallic instrument may be required, but it should be used with caution, as the softened prostate may easily be lacerated and false routes formed. Aspiration above the pubes may sometimes be preferable. If abscess forms, a free incision should be made, the position varying in different conditions. I would not take too arbitrary a stand on this point, but vary with its tendency to pointing.

Even if fluctuation is not distinct, a free and deep perineal incision should be made with the patient in the lithotomy posture. The formulating of this procedure was first brought forward by one of our own fellows, Dr. Gouley, several years ago.

After evacuation under antiseptic details the abscess should be washed out with a solution of bichloride of mercury (1 to 3,000) and a large drainage-tube passed deep into its cavity.

Even if fluctuation is not present and abscess is suspected, I should recommend a free perineal or rectal incision to relieve the great tension under the fibrous capsule.

After a few days pus is sure to form in the severer cases, and an incision shortens the duration of the disease and relieves the pain in a marvellous manner.

The passage of a sound into the bladder in the hope of rupturing the abscess into the urethra is sometimes recommended.—*New York Medical Journal, July* 25, 1891, *p.* 99.

[The reports of three cases which are appended to Dr. Ballou's paper are here omitted.]

67.—ON THE TREATMENT OF GLEET DUE TO POSTERIOR URETHRAL CATARRH.

By E. L. Keyes, M.D., New York.

The morbid conditions capable of producing a gleet are very many, but it is my intention to deal only with that variety dependent upon posterior urethral catarrh.

Its clinical picture is this: A patient has gonorrhœa following a more or less protracted course, perhaps complicated toward the end with swelled testicle or a more or less pronounced attack of gonorrhœal cystitis or vesical irritability, and then subsiding into a condition of mild gleet. Such a patient procures some, as he conceives, suitable injection, and as long as he continues to use it once or twice a day his urethra remains apparently dry, and he considers himself well. Within a day or two, however, after leaving off his favourite injection the discharge reappears, and goes on to reach a certain grade of intensity, possibly without other symptoms, or perhaps accompanied by itching or discomforting sensations in the anterior urethra near the meatus, or referred to the perineum, and sometimes accompanied by a little urinary urgency and precipitancy. Such a man, even while keeping down his show of gleet by means of injection, will notice that if he drinks wine or spirits, or if he indulges in sexual intercourse, especially to excess, or even if he has a nocturnal emission, that his show of gleet will certainly become promptly aggravated. These are the cases that get a new gonorrhœa every few months, and those who claim to have acquired a new discharge from perfectly healthy women—and their number in the community is considerable.

Take such a patient at his best, between his acuter attacks, when he thinks that he is keeping himself well, as he calls it, by the use of an injection, and when he has no visible show of

gleet—and ask him to urinate in a glass. Floating about in the urine will be noticed cottony chunks and irregular masses of fleecy muco-pus (not simple compact linear shreds), and more or less free pus. This patient is ignorantly imagining that because he sees nothing there is nothing to see, when all the while the drops of pus are oozing backward in his urethra, and being washed out by each urinary act—drops which, if they did come forward and show at his meatus, would convince him that his injection was a snare, and only a mask to conceal the presence of the enemy.

If one of these little fluffy, cottony chunks that float about in the urine be caught up in a pipette and examined microscopically, it will be found to be made up of more or less closely arranged rows or layers of pus-cells, strung out in striated films of colloidal prostatic mucus, entrapping the larger oval and rounded succulent cells from the neck of the bladder, some granular bodies, occasionally a crystal of oxalate of lime or uric acid, occasionally a stray spermatic element or a sympexion, sometimes a perfect hyaline prostatic cast—a cast to deceive even the elect, especially when, as is often the case in patients showing prostatic casts, particularly if there be also spermatozoa, the urine contains a faint trace of albumin.

A case like the typical one I have just described is often posterior urethritis pure and simple; there may be a small meatus and points of physiological anterior narrowing, but often the posterior urethra is alone at fault, and is responsible for the relapsing attacks of urethritis, and for the mild persistent gleet.

I do not at all claim that posterior urethritis must be treated locally to get well. On the contrary, most cases ultimately get well, and they do so without local treatment. Rest, the balsams and alkalies, the demulcent drinks, counter-irritation, time, change of air, sea trips, treating the anterior urethra, iron in chronic cases—all these things are potential, and most of them can be happily combined with the local posterior treatment, to the great advantage of the latter, and their co-operation is sometimes essential to the rapid and perfect effectiveness of the posterior treatment. I do claim, however, that most cases are suitable for local direct treatment, and that such cases under suitable local applications improve with a rapidity which is gratifying to the physician and quite obvious to the patient; and I claim further that, by recognizing the malady and treating it locally, many a urethra may be spared the use of the knife, and very much time saved.

Finally, I state candidly that a few cases are positively unsuited to local treatment, and get worse under it, no matter what substance is injected. To this class belong most tubercular

cases and some simple inflammatory, and some ordinary gonorrhœal cases. When, however, the treatment disagrees, the symptoms (notably the discharge of pus) become so promptly and so obviously aggravated that the futility of repeating the application becomes at once clear, while very little time is lost in making the test. I may add finally that there is practically no danger of producing cystitis or epididymitis, if the instrument be used carefully and not inserted too far. The risk of occasioning these complications is vastly less, according to my experience and belief, than that incurred by treating the malady with anterior injections or with sounds—or indeed less than is the risk of these complications if it is left untreated locally, and internal medication be relied upon.

The instrument I employ is the syringe that bears my name. It is founded upon Ulzman's model, and is superior to the latter in being made in one piece, so that no injection soils the fingers, and in being more solid. Guyon's syringe has a bulb at its extremity, and injects backward. It must, therefore, be introduced through the inflamed area to be effective, a manœuvre which inflicts unnecessary mechanical violence upon the tender parts. The same objection obtains in the case of all syringes having lateral holes or slits. My syringe and that of Ulzman have only one minute opening at the tip. This tip need be inserted only just within the hole in the triangular ligament, just beyond the bulbo-membranous junction. So inserted, the membranous urethra grasps the tip of the instrument and the contents of the syringe—twenty minims or more—may be gently thrown in, and the entire injection will quietly flow backward along the membranous urethra, through the prostate, and into the bladder, with as little violence as possible, not one drop escaping at the meatus upon the withdrawal of the syringe. The little air sucked up into the syringe upon charging it may be disregarded, as it remains at the top of the instrument and in its tube, and need not be discharged into the urethra.

Formerly, in using strong injections I deemed it important to throw in only a very few drops at the diseased focus. Now I endeavour to produce my result by using much milder injections than formerly, and I throw in the entire contents of the syringe in every instance, except where nitrate of silver is used in a strength greater than ten grains to the ounce, when I use a few drops only. I increase the strength of injection of a given substance only gradually, after establishing a tolerance of the milder strength, and in this way I avoid irritation, formerly more common. When the source of the flow of pus is reasonably well forward in the membranous urethra, I generally make the injection before the patient urinates. When the inflammation

extends further backward and the supply of pus is considerable, I cause the patient to urinate just before making the injection, so that the injected fluid may flow into the bladder and become applied thoroughly to the mucous membrane at the internal prostatic urethral orifice, without being there diluted or neutralized by coming into contact with urine in the bladder at this point.

In suitable cases the free pus first disappears from the second urinary flow (the urine being voided in two parts), then it disappears entirely from the urine, some shreds still remaining. These are attacked by increasing the strength of the injected fluid, or, if there be some stricture in the membranous urethra, by the safe use of sounds after the catarrhal surface has been modified by the previous use of the injections, combined often with anterior astringent injections, which the patient administers himself.

I have employed in deep urethral injection most of the substances which have repute in controlling the flow of pus from mucous membranes, even Pond's Extract. Such substances as hydrastin, boro-glyceride, nearly all the lead and zinc salts, iodoform, creolin, pyoktanin, &c.; but at the time of writing I have come to rely almost exclusively upon four substances—the sulphate of thallin, the glycerole of tannin, the sulphate of copper, and the nitrate of silver. I never now make a preparatory injection of cocaine, as I consider it unnecessary, often harmful.

The Sulphate of Thallin is bland and practically unirritating, and may be used up to a saturated solution, which is about twenty-four per cent. It is suitable for the more acute forms of inflammation (except in cases of acute frank, recent gonorrhœal cystitis, in which the nitrate of silver has the preference), and it is the substance I almost invariably commence with in a solution in water of about three per cent., increasing at each injection up to six, nine, and twelve per cent. The last-named strength will usually do all that thallin can do in reducing the show of free pus in the first urinary rush. The intervals of making this mild injection are best spaced by two, three, or four days, according to the effect, which is sometimes wonderfully prompt and gratifying. The injection causes practically no discomfort, only a little warmth as a rule, and may be retained as long as the patient chooses. *Sulphate of Copper* I use in a ten per cent. solution in pure glycerine. This I dilute with water for use, commencing at about one grain to the ounce and working up rather rapidly, if it agrees and has a good effect, to the full forty-eight grains in the ounce. It is markedly astringent in suitable cases, and generally in weak solutions, pains but little more than thallin; very strong solutions,

however, of course feel hot and cause precipitate and moderately painful urination for perhaps several hours. The stronger the solution, the longer the interval before a second application is advisable. I do not very often go above a strength of ten grains to the ounce. *Glycerole of Tannin*, when pure, is too thick to be sucked up into the syringe easily. I use it reduced by adding water, seventy-five, fifty, or twenty-five parts, where a more astringent (but sometimes less irritative) influence is aimed at than that procured by the copper solution. *Nitrate of Silver* I employ as high as a ten per cent. solution, but very, very rarely—practically never in catarrhal cases—use anything like this strength. It is most useful in acute gonorrhœal cystitis, and as a final astringent when copper and tannin are not efficient. I dilute it with water at each time of application, commence usually at a strength of one grain to the ounce, and very rarely have to go beyond ten, making the applications every three to eight days—studying the effect and being guided by it. This is the harshest of the applications, causes the most pain, precipitancy, and urgency of urination (which often lasts several hours), but frequently renders incalculable service. Carefully used, it is free from the danger of producing complications.

By the careful and observant use of these four solutions, which anyone may easily master after a few trials, the greatest advantage may be obtained in suitable cases of posterior urethritis. Did I not have them at my command I think I should give up the treatment of gleet. When they disagree the fact is immediately obvious, and their good effect equally clear when they suit a given case, while their employment is generally progressively satisfactory. The thallin makes a black solution when used in the same syringe with the nitrate of silver, which it takes some time to wash out. I therefore use two syringes, one for thallin and tannin, the other for copper and silver.—*Medical Record*, *July* 25, 1891, *p.* 85.

68.—ON SPERMATO-CYSTITIS (INFLAMMATION OF THE SEMINAL VESICLES).

By Jordan Lloyd, M.B., F.R.C.S., Surgeon to the Queen's Hospital, Birmingham.

The title of this paper may appear uninteresting and unimportant, because the term "spermato cystitis" is not met with in our ordinary surgical or medical text-books; but it is this very absence from the text-books which encourages me to call attention to a class of maladies which, although almost

entirely ignored, are really of common occurrence. So little attention has been paid to inflammatory diseases of the seminal vesicles, that the subject is dismissed in a few words even in special monographs upon venereal or genito-urinary disorders; but since my attention was first drawn to the subject I have met with many cases, and have satisfied myself that these maladies are by no means rare. They are, indeed, amongst the most common complications of gonorrhœa. They are usually overlooked, not because they do not give rise to definite signs and symptoms, but because these symptoms are misinterpreted, and are wrongly attributed to diseases of different organs altogether.

Spermato-cystitis is rarely seen as a primary malady; it is almost always secondary to urethritis. Whether we regard this inflammation as gonorrhœal or not depends upon our individual views on the specificity of the urethral discharges which follow sexual intercourse. But whatever our views on the nature of venereal urethritis, we shall all agree that this inflammation begins at the meatus and passes down the urethra for a variable distance, sometimes not more than a few lines, sometimes to the kidney pelvis itself, and that it frequently travels from the urinary tract along the seminal passages to the epididymis, and that epididymitis therefore is one of its most common complications. Its symptoms are attributed to other maladies altogether; they are looked upon as indicating the presence of prostatitis—acute, sub-acute, or chronic,—vesical irritability, inflammation of the neck of the bladder, or reflex spasms from an inflamed urethra. I question the existence at all of many of these maladies, and believe firmly that inflammation in and around the spermatic vesicles is the usual explanation of their various phenomena. It appears to me that an inflammation which has started down the common ejaculatory canal is much more likely to extend along the half-inch duct into the spermatic vesicles than along the sixteen-inch passage to the epididymis, and that it does do so anyone can determine for himself if he will examine per rectum all gonorrhœal patients who complain of increased frequency of micturition.

The similarities which exist between spermato-cystitis and epididymitis are extremely interesting, and are well worth a few moments' attention. In the first place they are rarely primary, but are almost always secondary to urethral inflammation. They occur in the third or fourth week of a gonorrhœa. The inflammatory process in both affects chiefly the connective tissue lying between the tubular structures, and is characterised by a considerable amount of hard brawny swelling, giving rise to the well-known ovoidal mass filling one-half of the scrotum in the one case, and to the diffused brawny swelling felt from the anterior wall of the rectum—mistaken for the acutely

inflamed prostate—in the other. In epididymitis it is now well known that it is not the testicle which swells, but the epididymal connective tissue ; and in spermato-cystitis it will be found, if a careful examination is made, that it is not the prostate which is swollen, but the vesicular or peri-vesicular tissue beyond. Suppuration in both cases is the exception, and resolution the rule. How often do we see a gonorrhœal epididymitis suppurate, despite the fact that the initial lesion from which the inflammation originated is itself suppurative? Spermato-cystitis terminates in resolution, but occasionally it may suppurate and give rise to deep-seated abscess in the pelvic floor. These abscesses may open or be opened into the rectum, the perineum, the urethra, or the bladder, and cases have been recorded where pus had made its way from the vesicle into the peritoneal cavity at Douglas's pouch and proved fatal.

Spermato-cystitis is met with in three forms—acute, subacute, and chronic. The first usually complicates the true gonorrhœa, the second occurs in the "non-specific" variety of urethritis, and the third is a sequel of either of the other two. With regard to the pathology of spermato-cystitis, I am sorry to say that my observations are not in any way complete, for the reason that it is a disease which does not kill, and which is met with therefore on the post-mortem table only by accident. I have examined large numbers of seminal vesicles after death, and have found great differences in their structure, size, shape, and attachments, not only in different bodies, but in the companion vesicles of the same individual. In a paper read before the Glasgow meeting of the British Medical Association, and published in the *British Medical Journal* of April 20th, 1889, I gave a *résumé* of my researches in the literature of the subject, and the facts therein detailed, added to what I have personally seen, convince me that inflammatory disease of this organ is a reality and is of frequent occurrence.

The symptoms of spermato-cystitis are identical with those given in the text-books as characteristic of the several varieties of prostatitis, of vesical irritability, and inflammation of the neck of the bladder, and a correct diagnosis between them can only be made by a carefully conducted digital examination from the rectum. I believe inflammation of the prostate to be a disease of comparative rarity, and am convinced that in the majority of cases where prostatitis is thought to complicate a urethritis it is the seminal vesicles which are the seat of the inflammation, and not the prostate at all. I cannot discover any *a priori* reason why the prostatic tissue should inflame any more than the corpus spongiosum or the bladder wall during the course of a urethritis, but I can understand why an inflammation which so frequently extends from the urethra along the

common ejaculatory duct to the vas and epididymis should find its way also to the seminal vesicle.

Acute spermato-cystitis occurs usually during the second or third week of a gonorrhœa. A patient complains of uneasiness, soon amounting to pain of a throbbing character, deep in the pelvis and perineum, with increased frequency of micturition going on to vesical tenesmus. The painful symptoms increase as the bladder distends, and are felt most acutely at the end of the penis at the close of the act of micturition, after which a brief period of relief may follow. Defecation is frequently painful ; the urethral discharge is lessened, and may disappear entirely. The urine remains acid and very slightly altered in character. It may contain a few pus- or blood-corpuscles, and throw down a slight mucous deposit, differing in this respect from the urine in acute gonorrhœa of the bladder. The most important sign of all, however, is the swelling to be felt from the rectum. This swelling will be found to occupy the whole base of the bladder from side to side, and to extend beyond the reach of the finger ; and I cannot conceive it possible that the prostate, shut up as it is in its own fibrous capsule, can swell up to this great size in the course of a few hours. We should remember that in gonorrhœal orchitis it is the inflamed connective tissue of the epididymis which constitutes the scrotal swelling, and not the testicle itself.

The subacute variety presents similar symptoms, but of a less severe type. It is most commonly seen later in the course of a urethritis, which is not, strictly speaking, gonorrhœal. Frequent erections and seminal emissions are occasionally present.

The chronic variety gives rise to symptoms which are very variable and often extremely perplexing. Amongst these may be mentioned : intractable gleet, not depending on stricture, which gets better and returns over and over again ; recurrent attacks of simple vesical irritability ; seminal emissions which may be rusty in colour or slightly purulent. Rectal examination reveals a distended or hardened vesicle, which is as easily differentiated from the normal prostate as is the nodule which may be felt behind the testicle in chronic epididymitis. I have aspirated vesicular swellings on several occasions, and have demonstrated their nature by finding spermatozoa in the fluid withdrawn. Prognosis in all varieties is, as a rule, favourable. The acute and subacute varieties usually end in resolution, and when suppuration occurs a timely incision is followed by complete cure. The chronic variety sometimes exists for months, but usually gets well in the end ; occasionally, however, it gives rise to symptoms during many years.

Speaking generally, the treatment of spermato-cystitis is the same as that of prostatitis. The acute kind must be dealt with

by rest in bed, milk diet, and a dozen leeches to the perineum ; warm fomentations ; belladonna or morphia suppositories; careful avoidance of constipation, motions being kept soft with sulphur in some form; and catheterisation with a Jaques rubber instrument if retention supervenes. Suppuration must be closely watched for by regular rectal examination, and when present must be treated by an incision from the perineum guided by the finger in the bowel. The practice of opening deep collections of pus about the rectum or prostate by incisions made from the bowel is not to be commended ; such abscesses are much better incised through the skin. An external wound is not only more easily got at, but it affords an opportunity of thoroughly exploring with a finger the cavity from which the pus is evacuated. In the article above referred to I give a short note of a case where I opened suppurations in both seminal vesicles at an interval of a few days. When an abscess has already made its way into the bladder, rectum, or ischio rectal fossa, free external drainage is the indication to follow. I believe that the majority of deep abscesses consecutive to urethritis are not prostatic, as is generally asserted, but are of vesicular origin. This may explain the fact mentioned by Von Zeissl—the most modern writer on the subject—that he has "never seen infiltration of urine and fistulæ follow prostatitis." Sir Henry Thompson, in writing of prostatic abscess, says : Abscesses *supposed* to be prostatic are not unfrequently external to the prostate, and not within the envelope of the organ ; and are, in fact, peri-prostatic. They arise much in the same manner as prostatic abscess, but are of less serious import." Our leading English authority on diseases of the genito-urinary system seems entirely to have overlooked spermato-cystitis as a complication of urethritis, or I fancy it would have struck him that the abscesses to which he alludes above were probably due to vesicular disease. The chronic variety is the most unsatisfactory of all kinds to treat, chiefly for the reason that the symptoms to which it gives rise are, as a rule, not sufficiently serious to justify surgical interference. If the suffering of the patient demand it, it is easy to aspirate a distended vesicle from the perineum, the needle being guided by a finger in the rectum. It is much easier, but not quite so free from the risk of inflammation, to aspirate from the rectum. When aspiration has failed, free incision or even excision of the vesicles may be performed through a perineal opening. Gleet is a common consequence of chronic spermato-cystitis, especially that variety of gleet which is brought on by beer drinking. Our leading writers make no mention of this. Otis sees in every gleet a stricture which wants dividing, and Berkeley Hill discovers granular patches in the urethra by means of the urethroscope which call for topical

applications. The gleet of vesicular disease will neither yield to the urethrotome nor the caustic stick, but may be benefited by a mild course of mercury, by a careful attention to the general health, and by an abstinence from vinous and sexual indulgence. —*The Lancet, October* 31, 1891, *p.* 975.

69.—ON THE ACTION OF METHYL VIOLET (PYOKTANIN), WITH ESPECIAL REFERENCE TO ITS USE IN GONORRHŒA AND IN THE TREATMENT OF ULCERS.

By Frederic F. Burghard, M.S., F.R.C.S., Assistant Surgeon to King's College Hospital.

Professor Stilling, in his article upon the Aniline Dyes as Antiseptics, an abstract of which appeared in *The Lancet* of April 18th, remarks that he has never seen irritation follow the application of a 1 in 1000 solution of this drug, either in man or animals. It is in order to show that such a solution is not by any means devoid of irritating properties in a not inconsiderable number of cases that I bring forward some of the results that I have obtained during a six weeks' trial of the drug. The number of cases in which I have used it is forty-five up to the present time; of these, thirty were cases of gonorrhœa in various stages of the disease, thirteen were cases of ulcers, wounds, and boils, and the remaining two were cases of malignant disease too advanced for operation. Of the last two cases I desire to say nothing at present; they will be dealt with, I hope, in a subsequent communication. On the first occasion on which I used the drug it was ordered for seven patients with gonorrhœa, two having had the discharge for three weeks or longer, the others having noticed it for the first time a few days previously. It was prescribed as a 1 in 1000 watery solution, and the men were instructed to retain the fluid in the urethra for a few minutes before allowing it to escape. Three cases in the acute stage were treated in a similar manner on a second occasion. The results were as follows:—In the two cases of three weeks' standing the discharge was markedly decreased; but there was much smarting on micturition—a symptom that had not been present previous to the use of the remedy, and which in one of the men amounted to severe pain. In the remaining eight cases the results were all the same. The discharge was increased in amount; there was intense scalding, with much induration and tenderness of the corpus spongiosum. In all the cases these symptoms had come on before the third

injection was used. In one out of the eight cases there supervened much œdema of the prepuce, with acute retention of urine, and the dorsal vein of the penis became thrombosed. In the remaining cases treated by this drug the strength of the solution was diminished. At first a 1 in 2000 solution was used. But in several cases that was found to cause much scalding on micturition; it appeared, however, invariably to rapidly diminish the amount of discharge. It has recently been my practice to commence with a 1 in 3000 solution, and cautiously increase the strength of it. And my principal object in writing this has been to advise those who are about to make a trial of pyoktanin in gonorrhœa to begin with a weak solution such as I have indicated, rather than the strong ones recommended by Professor Stilling and others.

With regard to its use in ulcers, it seems to me to be at once very efficacious and peculiarly applicable in out-patient practice. Foul ulcers lose their fetor, and sloughing sores clean up rapidly under its application. If it is used as a powder, either pure (as I prefer to use it) or in combination with another drug, it may be dusted thickly over the ulcer, and thick wool dressings applied outside. Under these circumstances the dressing does not require changing for several days, and that additional aid to sepsis—*i.e.*, dressings performed by the patient—is avoided. The powder should be dusted thickly on at each dressing, and each subsequent dressing should merely consist of dusting more powder over the crusted mass already there. This, in my hands, has given excellent results. I have also found it a valuable aid in cutting short suppuration when dusted into cavities made by opening abscesses. It is far superior to iodoform. In some cases it appears to have a decided local anæsthetic effect, which is very useful when dealing with painful ulcers. With regard to the irritation caused by its injection into the urethra, the explanation given by Professor Stilling can hardly hold good in my cases. The substance was proved by chemical analysis to be quite free from impurities, and when injected subcutaneously in quantities of 1 cc. at a time it caused no irritation, although such a strong solution as 1 in 300 was used. Moreover, the minute traces only that could ever be found in such dilute solutions as 1 in 1000 of such impurities as arsenic, copper, or zinc, would hardly give rise to the great amount of urethral irritation. Indeed, in some of the cases a zinc or copper injection was substituted for the pyoktanin with great advantage. When first injected beneath the skin, I have usually found that the drug causes some little pain, especially if the injection be made into a brawny cancerous spot, but this generally passes off in about half an hour. There is often a slight local induration at the seat of injection for a day or two,

but this is not tender. I have, however, lately met with a case where very tender, rapidly growing swellings developed at the seat of puncture. The case was one of very advanced malignant disease of the uterus. The patient had been in the habit of taking large doses of morphia subcutaneously for the relief of extreme pain, but no swellings had developed about the injection punctures. Two pyoktanin injections were given, each containing only a few drops. At each of these two spots swellings developed, and have been steadily increasing up to the present time. They are very tender, but there is no fluctuation to be detected. I have noticed practically no constitutional disturbance even after the injection of large doses. Injections of from 80 to 100 mins. of a 1 in 300 solution may be given without raising the temperature more than a degree, and without any bad results otherwise. This is quite in accordance with the observations of Professors Stilling and Mosetig-Moorhof.

Since the above was written I have obtained a quantity of the drug prepared by Merck of Darmstadt, and recommended by Professor Stilling as being free from impurity. With it, however, I have had much the same experience as I have described above. Solutions as strong as 1 in 1500 almost invariably gave rise to great increase in the scalding on micturition, and some amount of retention of urine was not uncommon. I, therefore, never begin now with a solution stronger than 1 in 3000, and gradually increase it up to 1 in 1500. Used in this way, the drug appears to me to be a useful addition to our list of urethral injections, though by no means unfailing or devoid of irritation in its action.—*The Lancet, May* 23, 1891, *p.* 1147.

AFFECTIONS OF THE SKIN, &c.

70.—ON ECZEMA MARGINATUM (RINGWORM OF THE THIGHS).

By H. W. Stelwagon, M.D., and B. Franklin Stahl, M.D., Philadephia.

[The following observations are based upon an interesting epidemic of cases which occurred in the Philadelphia Hospital.]

Tinea trichophytina cruris—tinea cruris, eczema marginatum, ringworm of the thighs—as met with in America, may be briefly described as an eczema-like eruption, with a sharply-defined, red, elevated, sometimes papulo-vesicular or vesico-

postular border, involving the cruro-genital folds, the inner surfaces of the thighs and contiguous sides of the scrotum, and at times extending downward several inches, exceptionally invading the pubic and lower abdominal surface, and, in rare instances, the axillæ. The severe type of the disease, involving the greater part of the thighs, lower abdomen, scrotum, and folds, inner portions of the buttocks, with marked thickening and infiltration persistently rebellious to treatment, is, fortunately, rarely met with outside of certain countries. The cases here to be referred to presented in their clinical symptoms nothing unusual beyond their acuteness and epidemic character; in some respects the area of disease was, comparatively speaking, somewhat limited, but this was doubtless due to the short duration and to the fact that therapeutic measures were early adopted.

This epidemic occurred, two or three years ago, in the Philadelphia Hospital, chiefly among the resident medical staff, but later in its course involving several officials and two or three of the nurses of the training-school. It was first noted in one of the resident physicians in July, and for six or seven weeks was limited to this patient. From this time on, however, its spread among his *confrères* was rapid, and before the disease had disappeared eighteen of the staff, several of the other officials, and several nurses had been attacked. Those of light complexion exhibited the more pronounced types of the disease, and the two out of twenty resident physicians who escaped were brunettes. So far as could be learned, in not more than two of the nurses was the cruro-genital region affected, but in two or three others several ringworm patches developed on other parts. As remarked, in most of the cases the surface involved was not large, but in a few instances the disease extended several inches down the thighs. Moreover, in a few cases, the axillæ were, primarily or secondarily, invaded; and in several of the subjects also, one or two typical ringworm patches presented at other points of the general surface, for instance, on the face, feet, and limbs. In almost all of the cases, and in all of the patches, the degree of inflammatory action, although superficial with inconceivable thickening or infiltration, was unusually severe from the beginning, precluding, as experience showed, the use of the stronger applications commonly employed in the treatment of this affection.

The cases came under our conjoint observation and care after the epidemic was well established. Several of the resident physicians had prescribed for themselves strong remedies with the hope of aborting or rapidly curing the disease, but with scarcely an exception, with the result of aggravating the symptoms and bringing about a painful, eczematous inflamma-

tion. With this fact brought to our notice it was thought, under the circumstances, advisable to use one of the milder parasiticides, and a lotion of sodium hyposulphite, a drachm to the ounce, was, therefore, prescribed. In cases just recovering from the effects of too strong applications, a carbolized boric-acid lotion, containing a few minims of glycerin and alcohol to the ounce, was employed at first, this subsequently giving place to the wash of sodium hyposulphite. Under the continuous employment of the latter remedy, the disease was gradually brought under control and in the course of several weeks—by the middle of November—was completely relieved. In all, the disease had attacked about twenty-five persons, and this within the space of several weeks. Later there was a slight recurrence in one or two of the patients, which, however, rapidly disappeared under a resumption of treatment. In the whole hospital, including officials, physicians, nurses, and inmates, excepting possibly, two or three cases which, upon an average, were always present in the institution, no other cases and no tendency to its spread were to be noted.

The main interest of this group of cases naturally hinges upon their source and the method of contagion. The epidemic itself had, we believe, in all probability, its origin in the case of the first resident physician attacked, and who, it will be remembered, remained the sole one affected for almost two months. In his case the disease was doubtless contracted in some accidental manner, for it could scarcely be accepted that this case and those subsequently affected had a common origin, inasmuch as the others were not attacked for some weeks later, and then almost simultaneously. The method and means of its spread may have been thus : The soiled linen of the resident staff was washed in the laundry of the institution at the same time and in the same machines, and it seems probable that in this manner the spores and mycelium of the trichophyton from this first case, as soon as the fungus had developed in sufficient quantity to be an active source of contagion, found their way to the others. The linen of the other house officials and nurses attacked was washed in the same machines in which that of the physicians had been laundried, but on different days, and naturally the contagious elements remaining over in the machines, if present at all, would be in scant quantity ; this fact would, we think, explain why so comparatively few of these officials, and probably only those especially susceptible, contracted the disease. That this is the correct explanation of this curious epidemic, however, we feel by no means certain, but after a careful and thorough examination into the facts and surroundings, it seems to be that which has the most plausible support.—*Medical News, February* 28, 1891, *p.* 239.

71.—ON PRURITUS VULVÆ.

By J. C. Webster, M.B., Assistant to the Professor of Midwifery and Diseases of Women in the University of Edinburgh.

Among the less common affections of the female genitals, there is no disease of which the pathology is more unknown, nor the treatment more unsatisfactory, than that which forms the subject of this paper. Under the heading of "Pruritus Vulvæ" the text-books include itching of the vulva of every form and degree, whether it be purely idiopathic or only the accompaniment or the result of some other recognisable condition.

In Professor Simpson's very full account of the disease, he mentions the following causes :—

1. Local.—Eruptive and inflammatory affections ; the drying of diabetic urine on the vulva ; the irritation of the part by discharges from uterus and vagina ; the presence of worms in the vulva and vagina ; congestion of the vessels, *e.g.*, sometimes in pregnancy.

2. Reflex.—The presence of worms in the rectum ; various diseases of the vagina and uterus.

3. Idiopathic.—Pathology unknown.

Pruritus vulvæ proper, the condition in which there is a more or less constant feeling of itchiness in the external genitals, unaccompanied by any apparent pathological change, local or distant, capable of causing it, is a disease about which nothing is practically known.

All will agree that it is a most troublesome and unpleasant complaint, and that, when considered in relation to certain bad results which may follow from it, it is worthy of most serious consideration. Apart from local excoriations, eruptions, hypertrophies, and malignant disease, which may be set up by long-continued scratching, the habit of masturbation may be brought about, the patient's normal balance of mind may become greatly disturbed by the constant torture, and, indeed, sometimes complete nervous breakdown may occur.

As to the seat of itching in these cases very inexact observations have been made.

Zweifel makes a statement, in which he says that it is most frequent immediately around about the clitoris, while Küchenmeister says that only the clitoris is in some cases affected. According to others, the mons veneris, the labia majora, the perinæum, the vagina, the anus, and surrounding parts may also be involved.

The reason of this inexactness is that the affected area is not often accurately marked out, the patient's statements as to its locality being taken as trustworthy; and also that care is not taken to distinguish between the itching resulting from the pruritus proper and that which follows irritation of the parts from scratching. It is well known that constant scratching will tend to make the sensation of itchiness felt over a wider area than the part which is actually the primary seat of the trouble. In this way patients' accounts may be very misleading.

In this connection it may be interesting to refer to three cases which I have seen during the past year. Their histories are very much alike. Each patient complained of itchiness about the external genitals, having suffered for more than two years. They had been in the hands of various medical men, and had used locally many kinds of ointments and lotions without success.

In the first case seen by me I tried several applications that had not been used, including menthol; but after a couple of months the patient complained as badly as ever. I then examined the parts very carefully, and found that the seat of the pruritus was limited to the clitoris, prepuce, and upper parts of the labia minora, although the woman herself had complained of general itchiness of the pudenda.

The woman then explained that the itching was at most times strictly localised to the above-named parts, and that it was only after scratching—especially when warm in bed—that it was more widespread. In this case the clitoris and nymphæ were slightly hypertrophied.

In another case careful examination showed exactly the same condition, the nymphæ being somewhat more enlarged than those of the former case.

In the third case the same parts were the main seat of the itchiness; there was, however, some itching, in addition, in the labia majora, which completely disappeared after I stopped the use of an irritating carbolic oil which someone had ordered her. The primary trouble, however, remained as bad as ever.

Treatment.—At present the orthodox plan of treatment is to make the patient apply locally many lotions and ointments for months, until at last in despair she gives up and goes to some one else, who again puts her through the same weary round of washings.

These local applications include ice, cold water; acid, alkali, mercury, tar, chloral, tobacco, and chloroform lotions; ointments of opium, menthol, and belladonna, besides many others. Such methods of treatment must be acknowledged to result in nothing but failure. It would appear that, so far as our

experience goes, the only way in which we can bring about a complete cure is by the thorough removal of the affected parts. In my cases, in which this method has been adopted, it has been very successful, while, also, the examination of the tissues removed reveals the existence of distinct pathological changes of such a nature as to make it extremely probable that they could only be removed by a radical operation.

The operation in each of my cases consisted in the removal of a spindle-shaped mass of tissue extending from half-an-inch above the clitoris as far down as a point midway between the glans and the urethral orifice. The removed portion consisted mainly of the greater part of the clitoris and the upper part of the nymphæ. The wound was closed from above downwards by a continuous suture of juniper catgut (No. 3). If only a small portion of the upper ends of the nymphæ require to be removed, the rawed surfaces may be brought together in such a manner that, after healing, scarcely any deformity can be noticed. In one case it was found that there was still some itching in the upper part of the remaining portions of the nymphæ. The removal of the affected areas resulted in a complete deliverance from the trouble.

In the review of the literature of the subject I have found but two accounts of the successful employment of such a radical form of treatment.

One, quoted by Carrard, is a short note of a case of pruritus limited to the clitoris, completely cured by the removal of that body. The other is by Schroeder and Löhlein, who reported five cases successfully treated by removal of the affected areas. In one of these the clitoris with its prepuce was removed; in another, a small piece of the right labium majus; in another, a large part of the left; in another, the clitoris and part of both labia.

The removal of portions of the external genitals for other distressing symptoms has been carried out in a few cases. Carrard reports two cases of hypertrophied nymphæ removed by Chrobak, of Vienna, on account of great tenderness, accompanied by a feeling of heaviness between the legs, and a desire to micturate. There was no pruritus. Ballantyne also reports two somewhat similar cases operated on by Professor Simpson. In none of these cases was pruritus present. Sir J. Y. Simpson sometimes temporarily separated the affected portion of skin by a subcutaneous incision with a tenotomy knife.

In conclusion, it is clear that, as far as our experience goes, the removal of parts of the external genitals, even of the clitoris, for localised affections otherwise incurable is a justifiable and necessary operation, though, for obvious reasons, it should not be done without the full consent of the patient.—*Edinburgh Medical Journal*, *July*, 1891, *p.* 39.

72.—A CASE OF PEMPHIGUS VEGETANS.

By T. Pagan Lowe, M.R.C.S., Honorary Medical Officer to the Eastern Dispensary, Bath.

In vol. lxxii. of the Medical and Chirurgical Transactions Dr. Radcliffe Crocker reports a case of this disease, together with fourteen other similar cases from different quarters. These fourteen cases were all that he was able to find, and only three of them were procured from home sources, the others having been reported on the Continent. Those three were seen by Mr. Jonathan Hutchinson, and were described by him as a new disease characterised by "chronic inflammation of the lips and mouth." They were seen before the disease had made much progress, and they all recovered under treatment by the internal administration of opium. With these three exceptions the remaining cases—including Dr. Crocker's and my own—died. In both these cases the opium treatment was given a fair trial, but they did not come under observation until the disease was far advanced. My patient was a married woman, aged forty-seven, who had always enjoyed excellent health until she was attacked in November, 1889. The throat and mouth were first affected, the disease soon afterwards appearing in the eyelids, axillæ, groins, as well as in other situations. There was nothing of any importance in the family history, and neither she nor her husband had suffered from syphilis. When her case came under my notice in February, 1890, the disease was of three months' standing, and her condition was briefly as follows:—Both lips were swollen, everted, and covered with black crusts, which, when detached, exposed a raw bleeding surface beneath. The mucous membrane of the mouth and pharynx was dry and brown, and covered with numerous excoriations. The eyelids were dotted with small black crusts, especially towards the outer canthi, and there was slight suffusion of the conjunctivæ. The scalp was thickly studded crusts. Both axillæ, with the adjacent portions of the chest and back, presented an appearance as if the skin had been severely scalded and the epidermis of the blisters had been peeled off; moreover, the same condition was present over the lower portion of the abdomen, extending downwards to the groins and upper portion of the thighs, and over the entire gluteal regions on both sides. The groins presented a very peculiar appearance, the epidermis being raised in thick, moist, irregular masses of leathery consistence, which were firmly adherent to the parts beneath. On the right flank, continuous with the denuded surface already described, was a large inflammatory area extending outwards for several inches, presenting the appearance of cutaneous erysipelas (this subsequently broke down, leaving a raw surface continuous with that already described). Between

the toes the skin was thick and leathery, closely resembling that in the groins. Between the fingers the integument was denuded of its epithelium. On the contiguous inner surfaces of both knees were two large raw patches, but only in one or two situations were any typical pemphigoid spots discovered; of these, one was on the middle of the extensor surface of the right forearm, another on the left side of the chest, and a third on the outer side of the left leg about the middle third. The patient's general condition was deplorable. She was unable to turn in bed without suffering severely. Deglutition was difficult and painful, and defecation and micturition produced severe torture. She had not slept for more than two hours altogether during the week preceding my first visit, and had taken very little nourishment; nevertheless, curiously enough, there was little or no emaciation. The treatment adopted was that recommended by Mr. Hutchinson—namely, opium, together with a liberal supply of stimulants and liquid nourishment. Local applications of eucalyptus ointment were freely applied, and constantly changed, but these did not appear to retard the spread of the disease. Dr. Unna's preparation of zinco-gelatine was also used in places. Dr. Goodridge very kindly saw this case with me, and added the weight of his opinion to mine that the disease had no connection whatever with syphilis. Together with many valuable suggestions as to the conduct of the case, he proposed that arsenic should be given in addition to the opium, in view of the probable connection of the disease with common pemphigus. The case terminated fatally on March 5th, 1890, about three months and a half from its commencement. A necropsy was not obtained.—*The Lancet*, *May* 23, 1891, *p.* 1146.

73.—ON THE TREATMENT OF CHRONIC ECZEMA BY CREOLIN.

By R. Glasgow Patteson, M.B., Surgeon to St. Vincent's Hospital, Dublin.

The value of tarry preparations in many forms of skin disease—especially psoriasis and eczema—has long been recognised. "If I were required to name one remedy only for eczema," writes Mr. Jonathan Hutchinson, "I would choose tar; if allowed to choose two, tar and lead; and if three, tar, lead, and mercury;" adding his "belief that tar is the specific for all forms of true eczematous inflammation of the skin." The form in which he uses it is the alkaline solution of coal-tar known as "Liquor Carbonis Detergens"—a teaspoonful to a pint of warm

water. The cost of this preparation debars its use in out-patient practice, and it was the cheapness of creolin, and its excellent antiseptic properties that induced me a year ago to try its effects in the treatment of chronic eczema. A short experience satisfied me that the most useful strength was that of one drachm of creolin to eight ounces of water—roughly speaking, a tea-spoonful to half a pint of water. In this proportion, from which I have never varied, it forms a bland and soothing emulsion, milky in appearance, and with a strong tarry odour, which has a marked effect in allaying irritability and itching, prevents the formation of scabs and crusts, and appears in a striking manner to moderate the pus-producing activity of certain forms of eczema. The mode of applying it which I have found most efficacious is the following, which, though applicable in the majority of instances, must yet, like every other remedy, be modified to meet individual cases.

The parts affected, having been freed from crusts or other accumulations, by appropriate means, should be freely bathed in the freshly-prepared emulsion for from ten to fifteen minutes. If the disease is in the acute stage, or if there is much secretion, lint soaked in the liquid may be applied over all parts, and retained in place by suitable dressings. But if the eczema is of the squamous type, treatment in the intervals is best carried out by means of ointments—that which has yielded in my hands the best results being one composed of zinc oxide, white precipitate, and the glycerine of the subacetate of lead. Under this treatment recent cases recover with astonishing rapidity, and even cases of long standing soon show signs of improvement which, in the majority of instances, goes on to complete and permanent recovery. In only a few instances has it failed to do more than alleviate the condition.

Case 1.—The first case in which I put the remedy to the test was that of a boy, aged nine, who had suffered for eight years from pustular eczema of the scalp. The whole surface was of a bright red colour, in parts covered with yellow crusts, in parts sodden and infiltrated with a semi-purulent fluid, which exuded freely on pressure. The crusts were removed, and soothing lotions applied until the acuteness of the outbreak had subsided, but as soon as a quiescent stage was reached the creolin treatment was begun with striking benefit. Patches of healthy skin immediately became apparent, and in a short time covered with hair, where seemingly beforehand not a trace of the hair follicles could be expected to remain. With occasional relapses the treatment was persisted in for nearly six months, when the hair was growing freely over all the head, except on the forehead in one or two small patches ; the scalp was normal in colour and in firmness, and the tendency to pus formation had

apparently ceased. The boy was practically well, and as he has not returned for a period of over two months for treatment, we may assume that the improvement continues, though of course in an affection like eczema it is still too soon to speak of a permanent cure.

Case 2.—The second case was that of a boy aged five, who had been the victim of a similar affection for three years, the pustular crusts completely surrounding the ears on either side. A similar line of treatment, combined with the ointment referred to above, effected a speedy and complete recovery without a solitary relapse, and now four months afterwards there is no recurrence.

I have since tried the remedy in cases of scaly eczema and psoriasis with marked relief to the irritability and itching, but it is still too soon to form any judgment as to its curative powers. But in the infective pustular eczema it is an agent that effectually controls the process, and well deserves a trial on a larger scale. If we accept Unna's definition of eczema as "a chronic parasitic catarrh of the skin, with desquamation, itching, and the disposition to respond to irritation by exudation and well-marked inflammation," then we have a rational basis on which to ground our treatment by such an active germicide as creolin.—*Dublin Medical Journal, July*, 1891, *p.* 16.

74.—ON THE PREPARATION OF OINTMENTS IN DISEASES OF THE SKIN.

By L. Duncan Bulkley, M.D., New York.

Dr. L. Duncan Bulkley has published a practical and suggestive article on the above subject, and gives many hints of value to practitioners. The application of ointments constitutes such a large element in the treatment of diseases of the skin, by the profession at large, that it seems desirable to present a few words of caution concerning their preparation and employment, for want of success often results from the improper compounding or application of one or another of this class of remedies.

It is better not to trust to any artificial means for preserving the freshness of ointments, but to secure sweet and good material, and always to reject that which is at all old, or ointments which have been long prepared. It is important to avoid the slightest rancidity in ointments, and it is better to order ointments to be freshly compounded of the strength desired, rather than to take those officinally prepared and kept in stock.

Among cerates, which are in some respects more valuable for ointments for most skin affections than lard, we have two, ceratum simplex, consisting of white wax 30 parts, lard 70 parts; ceratum cetacei, which is composed of spermaceti 10 parts, white wax 35 parts, and olive oil 55 parts. To these should be added unguentum cetacei, which is very like the latter, only somewhat softer. These all have considerable body, and when spread on the skin form a protective coating, more suitable for many conditions than lard alone; but the first-mentioned, or simple cerate, is far too hard for easy application in most diseases of the skin. The glyceritum amyli, composed of starch 10 parts and glycerin 90 parts is a good basis for ointments when fatty substances are not well borne, or when it is desirable to remove the application frequently with water. Combined with oil of cade 25 parts, sapo viridis 15 parts, and glycerite of starch 60 parts, it makes a most valuable application in psoriasis, which can be well rubbed in at night, and washed off completely in the morning.

The oleum theobromæ is ordinarily but little used in compounding ointments. It is particularly useful when added, in about a quarter part, to ointments for use on the hairy scalp, to give them a low melting-point, and to aid in forming a protective coating over the skin; when employed in too large a proportion, it will prove irritating to many skins.

Under the head of "ointments" we find but two preparations in the Pharmacopœia—the unguentum simplex, composed of lard 80 parts and yellow wax 20 parts; and the unguentum aquæ rosæ, of expressed almond oil 50 parts, spermaceti 10, white wax 10, and rose-water 30 parts. The unguentum simplex is a good combination—much better for general use than simple lard; but, on the other hand, it is often found to be too hard, and ointments made with it will often be difficult of application, and when made up for some time with other ingredients, will become too stiff for ready use; as ordinarily kept in drug-stores, it has not infrequently been found quite rancid.

The best ointment of all, when fresh and properly made, is the unguentum aquæ rosæ, the cold-cream of the Pharmacopœia. But some judgment and skill is necessary in its preparation, for unless very perfectly compounded, with prolonged rubbing together of the ingredients, the ointment will not be perfect; in summer, also, it will require rather a larger proportion of the spermaceti and white wax in order to have the proper consistency for a perfect application. Very frequently, when the skin tends to be too dry, a portion of the water may be replaced by glycerin. Occasionally the odour of the rose-water is not agreeable to the patient, and simple distilled water may

be used in its place. The water held in this ointment is undoubtedly an important element in its remarkable effects on the skin, for the ceratum cetacei and unguentum cetacei have quite a similar composition, but are by no means agreeable to most skins.

When the various products of petroleum, known in the Pharmacopœia by the general name of petrolatum, were introduced, it was thought they would furnish the best possible bases for ointments, and that they would rapidly supersede all other excipients; in Dr. Bulkley's opinion they will never supplant those already mentioned, and others of recognised value. They are by no means always agreeable and non-irritating to the skin; indeed, many individuals are found who cannot bear them on the skin at all. Most of them have not body enough to form good ointments, although for simple inunction, as a lubricant, or for the application of carbolic acid to the skin as an anti-pruritic, vaseline serves the purpose very well.

Recently, when lanolin, and subsequently aguine, were presented to the profession, it was expected that this substance would replace other ingredients as an excipient for ointments. But again we have been disappointed, and lanolin forms but a very small portion of the base of ointments used by those especially occupied with diseases of the skin. It is too sticky, and not easy of application, and, moreover, it will often prove irritating to a delicate skin. While it was thought to afford a means for the more ready absorption of medicaments, more experience has shown it to be questionable if this is the case. Indeed, in some experiments by Brooke, it was shown that the substances incorporated with lanolin were the slowest in entering the system. Lanolin is, however, useful as an addition to certain ointments, in the proportion of about 20 per cent., to give an adhesive quality to them, thus securing a firmer and more adherent coating for affected parts.

Of some forty officinal ointments, very few can be prescribed as they are with advantage in diseases of the skin. Thus the carbolic ointment is made of a strength of 10 per cent., which is far too strong for most skins; whereas the tannin ointment of the same strength is too weak to be of real service. The belladonna ointment is also of the same strength, and is capable, if used at all freely, of producing serious constitutional effects. Also, the officinal ointment of chrysarobin should be diluted for most skins.

Eight ointments are officinal containing preparations of mercury. Of these the blue ointment, containing 50 per cent. of metallic mercury is well known and of great value; but for inunction on most skins it requires dilution by one-half, in

order not to excite too much local irritation. White precipitate ointment has commonly to be diluted two or three times, even in psoriasis and seborrhœic eczema. The red iodide ointment is of fair strength, but to be effective in lupus, or where its corrosive power is required, it should be employed much stronger. Citrine ointment, one of the best known of the mercurial applications, is far too strong to be freely used. When diluted two to four times, it often serves a good purpose in reducing infiltrations of the skin. The yellow and the red oxide of mercury require to be very greatly diluted for use about the eyes.

The single ointment of iodine is a good preparation, containing a trifle of iodide of potassium. A prescription which is of great service in reducing glandular enlargements in syphilis, is a mixture of iodine ointment with the ordinary mercurial ointment in equal parts. When well rubbed together an ointment of the green iodide of mercury is made, which acts much more quickly than either of the ointments alone. For delicate skins it may require some dilution, but generally it is well borne. It is useful as a parasiticide in ringworm and favus of the scalp.

The unguentum picis liquidæ is an excellent remedy, composed of equal parts of tar and suet; but it is far too strong for general use undiluted. When combined with oxide of zinc and rose ointment, it forms one of the most perfect applications known for a large share of cases of subacute eczema, both in children and in adults: ℞.—Ung. picis, ʒij.; ung. zinci oxidi, ʒss.; ung. aquæ rosæ, ʒiv.—M.

The ointments of the carbonate of lead and iodide of lead, each 10 per cent., are also good combinations.

The latter is certainly an excellent means for causing absorption of enlarged strumous glands. The stramonium ointment containing 10 per cent. of the extract of stramonium, is likewise a good application, and forms a most valuable base for combination with acetate of lead and opium in the treatment of hemorrhoids.

There are four ointments containing sulphur, only one of which, the unguentum sulphuris, containing 30 per cent. of sublimed sulphur, is well known, or much used. This is also too strong for direct application to most skins; diluted two or three times with a little storax, and perhaps a little tar ointment, it forms an excellent treatment for scabies, although the more agreeable applications of naphthol and resorcin have largely taken its place in dermatological practice.

The oxide of zinc ointment of our Pharmacopœia is a fairly good preparation. It is made with benzoinoted lard, which is not agreeable to all skins; it is sometimes rancid and irritating

in cases in which a freshly-prepared zinc ointment in cold-cream is grateful and healing.

Diachylon ointment, when freshly and properly made, is one of the most valuable means of local therapy known for many diseases of the skin. The preparation made according to the original formula of Hebra, and given in the German Pharmacopœia, is a soft, buttery ointment, easily spread, and of a delightfully soothing character to most skins, and is decidedly superior to the ointment made according to the U.S. Pharmacopœia.

A few words may now be added in regard to the actual preparation or compounding of ointments, a feature which continually requires the attention of the physician, if he would have success in the treatment of skin diseases. It is desirable for the physician to frequently inspect the ointments or other preparations which are being employed, and to test them by smelling, feeling, rubbing on the skin, &c.

More harm is commonly done by too strong ointments than is usually supposed. The skin is a sensitive and irritable organ, and more often wants to be treated considerately, and soothed into good action, than it does to be stimulated and irritated. It is well to begin with a mild preparation, increasing the strength as circumstances seem to demand.

It is also well to remember that the average patient, who has not heretofore been instructed, or who has not had special experience, knows nothing in regard to the best mode of application of an ointment, and if the highest degree of success is to attend the use of any particular remedy, it must be only by its proper employment. Careful directions should, therefore, always be given to patients exactly how to apply ointments.

Where it is desired to keep a part continually under the effect of an ointment, it should be soaked in it, if it were possible, as completely as though the part were immersed in a very large mass of the same ; but as this is not possible, we have recourse to lint, and the ointment, which should always have considerable body, is spread to a very thick layer on the woolly side of the lint, and then firmly bound on the part.

An excellent illustration of the necessity for minute directions in regard to all these data is found in connection with eczema of the scrotum. When treated carelessly, or when the patient merely smears on an ointment, the disease will prove most distressing and rebellious ; but when, on the other hand, very minute directions are given in regard to the sudden and brief application of hot water once daily, at bedtime, and when the part is quickly dried and enclosed in a piece of lint spread with the tar and zinc ointment previously alluded to, and covered by a suspensory bandage, the patient has complete relief, and with

proper accompanying treatment can surely be cured, and that with reasonable speed.

The demand in dermatology is not so much for new drugs, applications, or methods of treatment, as it is for the diffused knowledge of what is already known to be of service, and the faithful carrying out of methods which experience and observation have proved to be useful.—Dr. Francis Williams' Report in *American Journal of Medical Sciences, October*, 1891, *p.* 399.

AFFECTIONS OF THE EYE AND EAR.

75.—THE PREVENTION OF OPHTHALMIA IN THE NEW-BORN.

By Simeon Snell, Ophthalmic Surgeon to the Sheffield General Infirmary.

There are few things more sad in my experience than to witness infants of only a week or two old brought for treatment with one or both eyes either already lost or irreparably damaged. Nor is this feeling rendered less by the reflection that the disease which has led to such dire results could have been in the first instance prevented, or if that opportunity had passed, timely treatment would have brought about recovery of sight. A moderate estimate gives 30 per cent. of all cases of blindness as due to this disease alone. The census of 1881 gave the total of blind as 22,832, and, therefore, no less than 7,000 of this number must be considered as being rendered blind from ophthalmia neonatorum ; 30 per cent, is, however, a rather low proportion—my own statistics place it higher. I have kept a record of all children admitted into the Sheffield School for the Blind since its opening. I find that after excluding three (which were not seen by me, or for some other reason) there is up to the present a total of 116. Of these in no fewer than forty-six can the cause of their blindness be traced to the disease of which we are speaking—a percentage of 39·6. The *employés* at the workshops of the Institution for the Blind give a rather lower estimate. These are adults ; and causes such as accidents, and to which I need not further here refer, have come into force which had not done so, or in a less degree, in the cases of the children. But with this deduction the proportion is left at fully one-third of every hundred blind that I have examined at the two institutions. But mention has been made thus far only of those who have been rendered blind in both eyes, and have in this way become fitted as inmates of

or workers at a blind institution. What means have we of estimating the number of others suffering from the loss of one organ, or with one or both more or less damaged?

It is needless to discuss now the means of treating the disease when once it has been set up. It is sufficient to say that it is recognised that, if adopted promptly, treatment is eminently satisfactory. My object is rather to deal with the important question of prevention. The present is peculiarly a time for preventive medicine and surgery, and in few instances can, I think, there be found a brighter field for recognising and obviating the causes of disease than the affection which, if neglected, leads to the disastrous results already set forth.

It appears to me of the highest importance that in lectures, text-books for students, as well as for midwives and monthly nurses, reference should prominently be made to the disease and its prevention and treatment. Credé showed several years since (1881) at Leipzig how prevention was much more within the range of the obstetrician than the ophthalmologist. The plan he advocated, as is now well known, was directly the umbilical cord was severed, the eyes were cleansed, and a two per cent. solution of nitrate of silver was dropped into the eyes. By this means he succeeded in reducing the percentage of the disease from thirteen to less than one per cent., and with even better results later. Others have witnessed to the efficacy of this method, which is practically an absolute preventive of ophthalmia. Credé thought at first that the child became infected during birth from the maternal secretions. With the object of overcoming such influences, injections of carbolic and salicylic acids were used before and at the time of delivery. This, however, appeared to diminish but not abolish the disease. Hence his resort to direct cleansing of the eyes, as before mentioned. His opinion, moreover, is supported by others. Ludwig Korn discusses this subject, and goes further than Credé. The method he employed at the Dresden Clinic for Women was thorough irrigation with solution of perchloride of mercury; during parturition the irrigations were repeated several times before and after every digital examination. As soon as the head was born the eyelids and surrounding parts were scrupulously cleansed by means of cotton soaked in hydrant water. Especially all the smegma was removed. The cotton was rubbed from the outer to the inner canthus, until the lids were perfectly clean. It was tried to prevent any opening of the eyes until the cleansing was finished. The results were very good. But as it seemed evident that no infection could take place during the passage of the child, the irrigations were gradually dispensed with. When no examination was made, no sublimate was used; and as it was

thought that no infection took place during the birth of the child, nitrate of silver was not used. Irrespective of the cleansing of the parturient mother, the eyes of all infants born in the Clinic were washed in the manner spoken of. The results were excellent. Three cases of ophthalmia only occurred in 1,000 instances—one in the last 700, and not one in the last 420. I was able to mention in a paper on this subject, read before the Yorkshire Branch of the British Medical Association in February, 1888, that previously to the publication of these observations of Korn's a very simple but efficacious plan had been in use at the Jessop Hospital for Women in Sheffield. I was indebted to Mr. J. M. Willey, late house surgeon, for kindly supplying me with the particulars, which I then gave as follows :—"The patients are among the poorest ; some are inmates of the hospital, but the great majority are confined at their own homes. The midwives have received instructions that immediately the head is born attention must be directed to the baby's eyes. Then with little pieces of lint moistened in tepid water the eyes are carefully washed, as well as the eyelids and parts adjoining. Subsequently in washing the child care is taken to guard against reinfection. During the last three years there have been 2,242 labours among the in-patients and out-patients. In the first 200 there were a few cases of purulent ophthalmia, but in the last 2,000, since the method has been systematically adopted, not a single case occurred. Directions were also given to the nurses that if a child's eyes looked red it was to be taken at once to the hospital for a drop of nitrate of silver solution to be dropped into the eye." The plan depends for its efficacy on simple cleansing, and its success seems to be well worthy of note.

From all this it appears, then, established that the ophthalmia of the new-born is a disease which permits of distinct prevention, and that even careful cleansing with plain water is sufficient. There may be reasons against entrusting such a strong solution of nitrate of silver as Credé advocated to nurses, but a much weaker solution would suffice. It may, however, be perhaps as well to use some antiseptic with the water employed for cleansing, in the manner used at the Jessop Hospital. Directions are now freely given to nurses and midwives as to the employment of antiseptics for the lying-in woman, and the sublimate solution freely ordered will do excellently for bathing the infants' eyes. Some of us who see the terrible effects of the disease are earnestly impressed with the importance of doing all we can to prevent its occurrence. As far as we are able we must spread knowledge as to the dangers of delay and the benefit resulting from early treatment. The obstetrician has, however, the opportunity of preventing the disease. The

teacher can find occasion to bring the subject before his pupils, and the writers of text-books, whether for medical students, midwives, or monthly nurses, should urge the importance of the affection and give directions as to the means necessary for prevention. No text-book should, I think, be published without some such teaching. The disease is particularly met with among the poor—much less frequently among the well-to-do. Hence the importance of midwives, who by degrees are acquiring a better and more recognised status, receiving thorough instruction in the subject.—*The Lancet, April* 25, 1891, *p.* 926.

76.—ON THE TREATMENT OF GRANULAR LIDS.

By F. Buller, M.D., Professor of Ophthalmology in M'Gill University, Montreal.

The discovery of Sattler, in 1881, that in trachoma or true conjunctival granulations certain characteristic bacteria are present, gave a new impetus to the search for more efficient remedies in this disease.

The trachoma coccus is found in the tissue of the conjunctival follicle or granulation. Morphologically, it is "a diplococcus of the shape of a double roll, and distinguished by its minuteness and the slight development of a dividing line. It stains with all basic aniline colours, and possesses no individual movement, though, on the other hand, a rotary and oscillating movement can be demonstrated. Inoculation with particles of pure culture, by puncturing the human conjunctiva, produces typical trachoma."

This discovery has led to the more systematic use of so-called germicides in the treatment of granular ophthalmia, and apparently with favourable results.

There are, of course, many remedial agents which may be employed on account of their supposed germicidal properties. Foremost among these stands corrosive sublimate, a drug which has had an established reputation in the treatment of conjunctival inflammations long before the germ theory was known. The same may be said of the red oxide of mercury ointment, which probably owes its curative properties to the transformation which it undergoes in the conjunctival sac into corrosive sublimate or some other active salt of mercury.

Solutions of corrosive sublimate has been used in varying strength, from 1–120 to 1–10,000. In using the strong solutions, cocaine has been employed to allay undue irritation. Personally I have never used stronger solutions than 1–1000, and have found considerable benefit from the free use of weaker solutions,

as 1–3,000 to 1–5,000, several times daily. Carbolic acid in solution, or applied pure to the everted lids once daily, is often extremely efficacious ; none of the pure acid, however, should be allowed to come in contact with the ocular conjunctiva. This may be avoided quite readily by making the application carefully to the everted lids and washing off with water before they are replaced.

Resorcin I have used in the same way with advantage, but, as far as my experience goes in this direction, it is inferior to pure carbolic acid.

Boric acid in fine powder, rubbed thoroughly into the palpebral conjunctiva, has been strongly advocated by some ophthalmic surgeons, but I have failed to satisfy myself that it is a desirable remedy used in this way.

Recently pyoctanin has been much praised. Certainly its unirritating qualities are a point in its favour, if the vaunted germicidal properties should turn out what they are claimed to be.

But the two remedies I have had most satisfaction from in the last few years are jequirity, and the operation of squeezing out the granulations. The former plan of treatment is only applicable in a certain class of cases, such as were formerly deemed suitable for treatment by inoculation. That is, old, inveterate cases with considerable corneal vascularity and rather firm trachomatous infiltrations, the conjunctiva being rather the reverse of moist and succulent.

The large and numerous round, or flattened and smooth, fibrous granulations are not amenable to the jequirity treatment. In favourable cases, one or two applications of a four per cent. solution of jequirity freshly prepared sets up a pretty active croupous conjunctivitis, which often becomes distinctly purulent in character, and the subsidence of this in a few days is followed by a rapid and often complete recovery. We must, however, be prepared to meet with disappointment in some instances, the granulations and pannus failing to disappear where the indications seemed clear for the use of this drug, and the reaction it caused quite after the normal type. I have only twice seen it cause troublesome ulceration of the cornea, and occasionally a dacryocystitis.

The operation of pressing out granulations is best done with Prince's ring forceps. The larger and more pulpy and gelatinous-looking the granulations are, the more thoroughly they can be eradicated in this way. Immediately after the operation the conjunctiva should be freely washed with a pretty strong solution of perchloride of mercury, and a weaker solution used several times daily until the abraded conjunctivitis heals. The results of this treatment are, as a rule, exceedingly satisfactory.

I do not mean to imply that the old standard remedies for granular ophthalmia are to be supplanted by the more recent ones, for they still play an important part in the treatment of more recent cases, and, in fact the judicious use of nitrate of silver, copper sulphate, alum, oxide of mercury, tannic acid, and some other remedies will generally suffice to cure ordinary recent cases, and it is only when too zealously and persistently employed that they are likely to prove hurtful. This is, perhaps, especially true of the silver and copper preparations, which should never be persevered with in the face of an augmenting irritation.

The true secret of success in the treatment of this disease in any of its forms lies in a careful observation of details, both local and general, and a nice adaptation of the remedy to the requirements of each case, rather than any attempt at routine practice.—*The Montreal Medical Journal, May*, 1891, *p.* 826.

77.—ON A MODIFICATION OF THE ORDINARY METHOD OF OPERATING FOR ADVANCEMENT OF THE TENDON OF THE RECTUS MUSCLE.

By D. Argyll Robertson, M.D., Ophthalmic Surgeon to the Royal Infirmary, Edinburgh.

Within the last few years, more particularly since the simplification effected by Dr. Prince in the operative procedure, the treatment of cases of strabismus by the advancement of a rectus tendon has become more extensively employed. While it is in cases of divergent strabismus (in which, as a rule, ordinary tenotomy fails to produce sufficient effect) that this operation is most particularly indicated, there are also some cases of convergent squint, associated with enfeebled action of the external recti, in which advancement of one or both external recti is required to effect a satisfactory result.

It is not, however, my intention in this short communication to discuss the class of cases suitable for this method of treatment, but merely to describe a slight modification of the ordinary method of operation whereby its performance is rendered more easy and the effect produced is more considerable.

The procedure I adopt is as follows, supposing the case to be one of divergent strabismus: The patient is anæsthetised; no doubt the operation may be performed without the use of chloroform or ether, the sensitiveness of the eye being reduced by the local application and subconjunctival injection of cocaine, but under the circumstances the patient seldom keeps absolutely steady, and the muscular tonicity is never relaxed—conditions which materially interfere with the easy performance of the operation. The tendon of the internal rectus is exposed and

caught in Prince's strabismus forceps; next the tendon of the external rectus is divided subconjunctivally. It is, I think, best to defer the division of the external rectus until the internal rectus has been fixed with Prince's forceps, as the intact condition of the external muscle keeps the eye directed outwards, and by exposing the parts operated on facilitates the first steps of the operation. The internal rectus is next divided close to its sclerotic insertion; the muscle held up and cleared for some distance of its attachments to conjunctiva and ocular capsule. The next step consists in the introduction of the ligature. A fine waxed black-silk thread is taken to either extremity of which a fine curved needle is attached. One of these needles is threaded in and out through the base of the tendon, which is pulled forward by Prince's forceps. This, though it seems a weak hold, has in practice proved quite sufficient. One of the needles is now passed in and out, under and over the conjunctiva, close to the upper margin of the cornea, until a point well beyond the outer margin of the cornea is reached. In like manner the other needle is passed under and over the conjunctiva, close to the lower margin of the cornea, till a corresponding point beyond the outer margin of the cornea is reached. A small bit of the extremity of the internal rectus tendon (varying in amount according to the effect desired) is then snipped off, the end of the ligature tightened, until the cornea is well directed inwards, and tied. To facilitate the tightening of the ligature, the cornea may at the time be rolled inwards by the use of forceps. The edges of the conjunctival incision are brought together by a couple of sutures, and the operation is ended. Sometimes the traction of the ligature causes the conjunctiva at some points to overlap the margin of the cornea, but this does not interfere in any way with the success of the operation. The ordinary antiseptic washings and dressings are employed. Both eyes are bandaged for twenty-four hours, so as to keep the eyes thoroughly at rest, and the eye operated on for one other day. On the fourth or fifth day the ligature is removed. This is easily effected by dividing the ligature in any part of its course, where it lies on the surface of the conjunctiva, and pulling on the knot, when the whole extent of the ligature at once comes away.

By this method of operating three advantages, in my opinion, are obtained. First, the cornea is more firmly and efficiently directed inwards by the ligature, which envelops the margin of the cornea and thus obtains a thorough hold of the anterior part of the globe. By the other methods of operating, the hold the ligature has on the conjunctiva is a very yielding one, whereby the effect apparent at the time of operation becomes materially reduced during the healing process.

Another advantage is the easy removal of the ligature. I have sometimes experienced the greatest difficulty in its removal before having recourse to this method of operating, having to burrow under the conjunctiva to remove a small disfiguring bit of ligature.

One more point in which this operation may be preferable to others lies in the circumstance that the tendon of the muscle is held as it were in the loop of the ligature, and thus may naturally lie in its ordinary plane, whereas in other methods of operating a more or less oblique direction may unwittingly be imparted to the muscle by greater traction being effected on the upper or the lower ligature.

The division of the external rectus should, as I have stated, be done subconjunctivally, as otherwise the circumcorneal ligature might interfere with the conjunctival incision. I have performed the operation now in about ten or twelve cases, and found the results very satisfactory. Unfortunately I have no record of the exact conditions before and after operation in some of the cases, while in others the notes have been mislaid. I can only lay before you a statement of these conditions in four of the patients.

Case 1.—E. J., aged 25, suffering from an attack of hemiplegia several years ago ; she now is affected with excessive divergent strabismus of left eye of $37\frac{1}{2}^{\circ}$. After the operation the strabismus was reduced to 22°, the effect being $15\frac{1}{2}^{\circ}$. A subsequent tenotomy operation of the right eye almost completely corrected the strabismus.

Case 2.—J. S., aged 39, affected with divergent strabismus of right eye of 32°. After the operation 8° of strabismus remained, the effect produced being 24°.

Case 3.—J. C., aged 22, suffers from convergent strabismus of 35° of right eye, which has existed since she was seven years old. The abduction in both eyes is incomplete from weakness of external recti. After the operation strabismus of 14° remained, the effect produced by the operation being 21°.

Case 4.—J. H., aged 16, affected with divergent strabismus of right eye of $33\frac{1}{2}^{\circ}$. After the operation the eyes were almost perfectly straight, the effect produced being about 30°.

I am indebted to my friend Dr. Maddox for his careful examination of the extent of strabismus before and after operation in these cases, and to my non-resident clinical clerk, Dr. Watson, for the other particulars. These were by no means the most satisfactory results obtained. In some of the other cases, of which I can find no exact notes, the strabismus was greater in degree, and the effect of the operation more decided. In none was the operation ineffective or attended with subsequent annoyance, and I have confidence in commending it for adoption.—*British Medical Journal, August* 29, 1891, *p.* 471.

78.—ON THE TREATMENT OF IMMATURE CATARACTS.

By N. C. Macnamara, F.R.C.S., Surgeon to the Royal Westminster Ophthalmic Hospital.

[The following article is taken from Mr. Macnamara's address on certain points in ophthalmic practice delivered at the meeting of the British Medical Association, at Bournemouth, 1891:]

I desire to give a few remarks on subjects connected with the practice of ophthalmic surgery, which are not referred to in any of the papers to be brought before us at this meeting.

With reference to this subject, the question I wish to propose is: Are there any valid reasons why we should not treat immature in the same way as we treat cases of matured cataracts? The answer commonly given to this question is: Yes; because in immature cataracts, a portion of the cortex of the lens being transparent, it follows that during the extraction of such a lens some of this transparent matter is likely to be left in the anterior chamber of the eye, and will probably excite inflammation of the iris with all its consequences. There can be no question as to the fact that violent inflammation of the iris frequently follows injuries inflicted on the eye by which the capsule of the lens is ruptured, and, the soft cortex being liberated, comes to rest on the iris. But in these cases there is often a wound in the outer covering of the eyeball through which septic matter enters the eye, and causes inflammation in the damaged tissues independently of any influence which the soft cortical substance may exercise on the iris. It may be a traumatic cataract is produced without a wound either in the cornea or sclerotic; nevertheless violent inflammation occurs in the eye, which must therefore have arisen independently of septic matter. In many cases of this description, the aqueous gains access to the substance of the lens, and causes its cortex to swell to such an extent that it exerts abnormal pressure upon the angle of the anterior chamber, and leads to symptoms of acute glaucoma. Lastly, in all cases of traumatic cataract, it is most probable after the capsule is ruptured that some of its cells escape, and, becoming attached to the iris, grow, exciting hyperæmia and not infrequently inflammation of the iris. But, granting all this, it does not follow that inflammation of the iris results from the presence of aseptic cortical matter in the anterior chamber after the operation of extraction. In every such proceeding we should keep the eye absolutely free of septic matter, and by far the larger portion of the lens, even in immature cataracts, being removed, that which remains cannot well exercise injurious pressure upon the angle of the anterior chamber. So that, in the extraction of an immature cataract, two of the most frequent causes of inflammation as met with in

traumatic cases may be avoided, for we can keep the anterior chamber aseptic, and also avoid intraocular tension produced by the pressure of the lens on the spaces of Fontana.

I have long taught that the operation of extraction is successful in proportion to the completeness with which we remove the lens and its capsule from the eye. But I cannot understand why soft asceptic lenticular matter should cause iritis, although it remains in contact with the iris ; there is no evidence in support of the views held on this subject by Pagenstecher and Graefe, that soft lenticular matter acts chemically as an irritant when applied to the iris. On the other hand, we frequently find clots of blood and pus pass from the anterior chamber, and there is no reason why cortical matter should not be carried away through the lymphatics of the eye. I can understand this soft material plugging the lymphatics in its passage outwards, and so, perhaps, impeding the circulation of lymph, and in this way producing glaucoma ; but we have no evidence of any such pathological changes. Doubtless, if the capsule with its living cell protoplasm comes to rest on the iris, it may form connective tissue, and produce an after-cataract ; but an accident of this kind is as liable to occur in the extraction of a mature as it is after the removal of an immature cataract.

If from considerations such as these, and above all from the results of practice, we arrive at the conclusion that there is no special reason why we should not extract an immature cataract, I need hardly dwell on the great advantage which may be derived from such a proceeding in cases of advancing cataracts in both eyes. How frequently we are consulted by persons who may have reached the age of 60 and upwards, complaining of failing sight caused by opacity of the lens. Such a person may be able to get about by himself ; he may be able to count fingers with both eyes, and even read No. 4 Snellen with the best eye, and No. 7 with the other eye, nevertheless he can no longer read ordinary type with comfort, and has an ever present feeling that with the loneliness of advancing years he is doomed to suffer loss of sight. The mental depression arising from a state of things such as this can hardly be realised unless by those who have gone through it. To tell a man in these circumstances that he must wait, it may be for two or three years, until the cataract has fully formed in one eye, is a sentence which none of us would pass if it were in our power to remove the cause of the impaired vision without serious risk to the eye.

The idea I wish to enforce is that it is a mistake to condemn a patient suffering from cataracts in both eyes to wait for an operation until the cataract in one eye has become matured. I would go a step further, and state my conviction that the results following the extraction of immature cataracts are more favour-

able on the whole than those of fully formed cataracts, because in the former the lens escapes from the eye with less damage to surrounding structures than it does when a large hard cataract has to be extracted. But in making this statement I would guard it to the extent that I hold it necessary for the successful extraction of an immature cataract that a sufficiently large opening should be made in the cornea to allow the lens to pass through it with ease ; that an iridectomy is performed, and this is best done at the time of the extraction ; lastly, after rupturing the capsule of the lens, gentle and continued pressure with the curette must be made upon the lower portion of the cornea, the curette following up the lens as it passes outwards through the section made in the cornea. Unless the cataract in its passage outwards is followed up in this way, it is apt to get entangled by the iris or between the lips of the wound, and some of its cortex with the cells lining the capsule remain in contact with the iris.

I do not propose to prop up the views I have expressed by parading before you the results of my own practice, but I am much indebted to my assistant, Mr. Urquhart Black, for a list of cases and their results, which he has carefully compiled for me. The study of these cases has been useful in that it reminds me of patients who have been under my care, and enables me confidently to recommend the proceeding, which is far from being a novel one, of extracting an immature cataract when both eyes are affected, so soon as the patient is inconvenienced by the increasing opacity of his lenses. I make the degree of impairment of vision depending on the changes in the lens my guide as to the advisability of recommending extraction rather than the stage of maturity at which the cataract has arrived.

Among the upper classes, especially those over 65 years of age, I believe it is safer, having first applied a solution of cocaine to the eye, to get a thoroughly competent person to administer an anæsthetic to the patient before operating. If an anæsthetic is administered the eyelids should, after the operation, be smeared over with an ointment of vaseline and iodoform, and a carefully adjusted pad of antiseptic wool applied over the eye with a linen bandage, our object being to keep some pressure on the eye for twelve hours, or until all inclination to sickness has passed away, when a light cotton pad and elastic bandage should be substituted for the first dressings. Unless symptoms arise indicating the use of atropine, eserine, or cocaine, I never drop a solution of either of these drugs into the eye after the operation for extraction. The patient can sit up on the third day after the operation, but I am sure that the greater the care we take of the eye, for at least a fortnight, the better will be the result.—*The British Medical Journal, August* 1, 1891, *p.* 250.

79.—ON CHRONIC PURULENT INFLAMMATION OF THE MIDDLE EAR.

By Professor Josef Gruber, Vienna University.

Directly over the handle of the malleus, which can be seen through the tympanum, there can easily be described in the normal ear a triangular space with its apex downwards, its base upward, and sides towards the auditory parietes. This triangular space, when viewed from the exterior, appears depressed into the tympanic cavity, hanging loose and flabby, from which it has derived the name "Membrana s. Pars flaccida," or more recently by the name of "Membrana Shrapnelli" from Shrapnell, who first described this space.

It is my firm conviction that this membrane is more frequently perforated than is commonly believed by strong vibrations, blowing the nose, &c., and that it soon heals up again, but some of these cases not completing the repair of the rent remain open during life. These ruptures taking place so unconsciously gave rise to the name of "Foramina Rivini" by the old aurists, but are now recognised as old perforations not completing the opening in the tympanum. This perforation of the Shrapnell membrane does not seem to interfere much with the function of the tympanum, as the orifice remaining unclosed is unusually small, but its pathological import must be considered as very important owing to the easy access of infectious germs into the tympanic cavity, where they give rise to rapid inflammations. Clinical experience shows that this inflammation is greatly to be dreaded; and it is worthy of note that particular parts of the soft coverings of the middle ear are more subject to these inflammations than others, as for example, the roof of the cavity and the parts where the small bones form their centres of movement. Why these parts should be specially attacked, and pass on to purulent inflammation, is not so easy of explanation, unless we can connect the injurious effect of the Eustachian tube in its function upon these particular parts which may be favoured by the artificial opening with the external ear.

With reference to the frequency of the marginal perforation of the Shrapnell membrane, the inflammation is usually in the atticus, which is in close proximity to the perforation, but so many of the perforations are without any morbid changes that some explanation is necessary. After the thin membrane is torn, it becomes lax and flabby, falls in on the neck of the malleus on which it rests, and gradually thereafter becomes adherent that a valvular opening is left unclosed above which leaves a communication between the outer ear and the atticus of

the middle ear. It is, therefore, conceivable how any irritating substance can readily be admitted to the middle ear with injurious consequences, but in many of these cases where the direct communication exists, there is no immediate inflammation existing. However, it is readily understood how this opening may go for years, but when the first occasion arises an active inflammation is induced.

In comparing the frequency of the inflammations occurring in the middle ear, we will find that those arising from the Shrapnell membrane are not so numerous as those from other causes, which may be easily explained from the site of the inflammation, the other class commencing at the under section of the cavity, where the inflammatory germ is easily conveyed thither by the Eustachian tube, and this is usually confined to the lower parts, while the upper section is exempted. The apparent reason of this exclusion depends on the isolating media that are less phlogistic, such as the handle of malleus, ambos, ligamentum mallei anterior, &c., which arrests the extension of the inflammation upwards, and thus confines it to the base of the cavity. When the inflammation is of long standing it may gradually invade the upper segment from below or above, but sometimes this inflammation may be so capricious as to destroy the whole partition except the Shrapnell membrane, which may be left standing entire.

It is not difficult to see that the perforation of the membrane flaccida is not always the worse accident that occurs in chronic inflammations of the atticus, or upper segment of the middle ear. On the contrary, it may be viewed as a favourable complication admitting the egress of purulent matter that would otherwise trickle down over the small bones of the ear into the lower section of the cavity, where a vast amount of general destruction might be done before the exciting matter is discharged. Nothing gives more concern to the aurist than the retention of such products, which complicates the disease and produces a chronic condition attended with all the unhappy consequences of polypoid growths of different kinds, destruction of the joints connecting the small bones with often caries and necrosis, caries of the roof and other parts of the temporal bone, and in rarer cases this chronic extension may pass over to the fissura glaseri producing retro-maxillary and retro-pharyngeal abscesses. The perforation of the Shrapnell membrane, when the opening is free, obviates these dangers by the chronic otorrhœa.

It is easily understood how that the closing of the perforation is not the chief object of the aurist in these cases, but rather to prevent its closure until all the pathological changes have been corrected. His first duty is to ascertain precisely what changes

have taken place both inside and outside of the tympanum Different methods of diagnosis have to be resorted to, but the first is an ocular examination, whereby the outside and inside of the Shrapnell membrane may be satisfactorily understood. This may be verified and enlarged by the air douche or fluid injections into the Eustachian tube, whereby portions of the retained matter may be swept out and microscopically examined. Sounding is another important method of examination which may be expeditiously performed with a fine bent sound through a narrow perforation, whereby caries, polypus, or other changes in the internal ear may be diagnosed.

We now come to the important point of how these purulent inflammations should be treated. It is evident from the diagnosis that no single line of conduct can be laid down as the correct method. As a general rule surgical interference has to be resorted to. The perforation of the tympanum may not lie in the proper direction, nor is it large enough to carry off the inflammatory products, and hence a second incision or an enlargement of the primary one may have to be performed. Where greater destruction has taken place, a more heroic operation may be required, as, when caries is present, the small bones and part of the temporal bones may have to be removed. In the first stages of the pathological change we have an inflammatory process to combat which is sometimes very difficult owing to the inflammatory product not escaping through the small perforation, or from additional irritating germs entering by the small opening and further exciting the abnormal change. In chronic inflammatory conditions the polypoid growths of retained matter may assume a variety of forms, but must be carefully diagnosed before treatment.

After carefully satisfying myself in these common cases that the more heroic operation is unnecessary, I commonly commence treatment by carefully disinfecting the whole ear by a solution of common salt, and, after all foreign matter has been removed, rinsing the whole with a sublimate solution 1 in 1,000. When all has been thoroughly cleaned I apply Siegle's trocar and balloon, compressed before introduction, which draws out by suction the tympanum and any other remaining part of *débris* that may not yet have been removed, as large pieces of mucous membrane or granulation matter may become impacted in the aperture during injections, thus closing all communication. By this means I am better able to judge whether the perforation is unsuitable for the discharge or too small, and requiring incision. I prefer, however, to enlarge the opening by the galvano-caustic "myringectomie," which is more suitable for the proper therapeutical treatment of the chronic condition, and destroying the infectious germs in the morbid process. The principal success

attending the treatment will depend on the free opening and cleaning out of all retained matter and granulation from the upper part of the tympanic cavity. This I advise to be done with a sharp scoop, of which I always carry a few of different forms and sizes in my operating case.

Having thus removed all injurious substances and checked hemorrhage, I now introduce iodoform or sublimate gauze tampons into the inflammatory area in the middle ear, as well as closing the outer ear with the same substance. These tampons for the middle ear have a special arrangement with a long thread attached, which lies in the external ear, and is a guide for the forceps removing the tampon from the middle ear through the aperture. The tampon ought not to be removed for a few days unless untoward symptoms appear, such as pain, fever, &c., or where the discharge or secretions are still abundant. If the case proceed favourably, with very little secretion, five or eight days should elapse before any removal of the dressing, after which it should easily be removed, but if any difficulty should arise a small quantity of antiseptic fluid should be injected to loosen the tampon. As soon as the inflammatory secretion has ceased tamponing should also cease, but a tampon should be laid outside as a protection. Should the secretion recommence fresh tamponnading should again be resorted to.—*The Medical Press and Circular, May* 6, 1891, *p.* 451.

80.—ON THE TREATMENT OF CHRONIC PURULENT OTITIS MEDIA BY EXCISION OF THE CARIOUS OSSICLES AND REMOVAL OF OBSTRUCTIONS IN THE TYMPANIC ATTIC.

By Christopher J. Colles, M.D., New York.

[Dr. Colles gives the narratives of three successful cases, upon which he remarks :—" In these cases excision was followed not only by cessation of the disagreeable discharge, but by a very considerable improvement in hearing. The bare record of the degree of the improvement in the hearing power of such patients may not appear so great to us, but we must regard it from their point of view to properly appreciate the value of the amount gained. The same remark, indeed, may be applied to the result of any surgical procedure. This improvement in hearing, however, in connection with the removal of the diseased and obstructing tissues, is a gratifying occurrence in the cases I have endeavoured to describe. Such purulent conditions are not only

disagreeable and annoying to the patient, but a constant menace to his existence. To quote from a recent German writer on this subject, 'the result *quoad vitam* should be more highly valued than *quoad functionem*.'"]

In searching the literature of the subject it is interesting to note some of the results obtained by different operators. Schwartze seems to have been the first (1878) to undertake excision in cases of chronic otorrhœa. J. Kessel, however, reported a case of removal of the ossicles for the relief of persistent chronic purulency in 1879.

The patient, a female, aged twenty-three years, had suffered with otorrhœa (right) since childhood. The discharge ceased in eight days after the operation, also the distressing tinnitus. Before the operation the voice could not be heard at all; after excision ordinary conversation could be heard at the distance of one metre.

In 1887 Kessel tells us that he has performed the operation in more than 100 cases, and with most gratifying results. Schwartze has been for many years an ardent advocate of this procedure; some 28 of his cases operated at the Ear Clinic at Halle were recently reported by E. Wetzel. Ludewig has also lately published 32 cases of excision of the incus and malleus, gathered from the same sources.

Kretschmann, Stacke, Sexton, C. H. Burnett, and Colles have also reported many cases, and all demonstrate the beneficial results of this treatment.

Of 120 cases compiled from the sources mentioned and in which the details are more carefully reported, we find that in 60 per cent. the otorrhœa was cured, and in only $4\frac{1}{6}$ per cent. unimproved, whilst the remaining cases resulted in more or less marked improvement in this respect. The hearing improved in 63 out of 120 cases, or $52\frac{1}{2}$ per cent., in many of them to a remarkable degree. In two cases reported by Wetzel, the hearing became worse; in the one the stapes was removed by accident, whilst in the other case the mastoid antrum was opened at the same time that excision was done.

Even in those cases where the otorrhœa did not cease entirely, owing to a carious condition of the neighbouring bony walls, such subjective systems as headaches, tinnitus aurium, vertigo, etc., are reported to have either ceased entirely or have been greatly diminished in intensity.

All authorities on the subject agree as to the danger-less character of the operation. No case of fatal results has been reported up to the present, and it is difficult to see why such should occur if ordinary precautions are exercised. In a few cases temporary facial paralysis has followed, but for a short interval only. It is probable that in these cases the canalis

facialis was already greatly involved in the destructive process. Regarding the operation itself a brief description will be necessary. For the purpose of illumination an electric head-light is decidedly better than the ordinary light used in examination. The lamp (6 to 8-candle power) is attached to the head-band like a mirror. Complete immobility of the head is secured by narcosis. After the ear has been thoroughly cleansed, the remains of the drum-head are cut away with a small spade-shaped knife, or a small straight-bladed, blunt-pointed knife may be used with advantage ; the attachments of the malleus are divided with either of these instruments. The latter bonelet is then seized with a dressing forceps and brought away. Some operators prefer the wire polypus snare-loop for the removal of the malleus to the ordinary dressing forceps, but this is simply a matter of individual taste. The foreign-body forceps of Sexton has proved itself of great value for this purpose. Lucae uses an instrument resembling a small litho-tribe. If the articulation between incus and stapes is intact, it may be divided with a small knife the blade of which is bent at an obtuse angle to the shaft. In many cases it will be found very difficult to bring the incus down into view, and in many others this ossicle will not be found at all, having become destroyed by disease and swept out during the course of the discharge. In some cases it may become dislodged during the operation backward and upward into the mastoid antrum. Ludewig opens the antrum in such cases where he suspects the latter accident to have taken place, in order to remove the dislodged incus, if possible. As far as his own observation goes, however, the writer considers this procedure unnecessary. For bringing the incus down into view, Kretschmann uses an instrument the extreme end of which is bent to a right-angle with the shaft, and having on its point a cup-like bulb. Ferrer and Ludewig have both devised small hook-shaped instruments for this purpose. An ordinary malleable probe, bent to the angle desired, is, however, very effective for the object mentioned. When brought down into the atrium the ossicle is extracted with the forceps. All adhesions and pockets existing in the tympanic cavity, especially in the attic, should be broken down, making free drainage possible. Hemorrhage from granulations sometimes prolongs the operation, but is easily controlled by syringing with hot water. As a rule, however, bleeding does not interfere much and may be stopped by wiping out with cotton-wool tampons.

There is very rarely any pain after the operation. Should it occur, it can be easily controlled by the instillation of a few drops of a 4 per cent. solution of cocaine.—*American Journal of Medical Sciences, May*, 1891, *p.* 481.

81.—ON THE TREATMENT OF INFLAMMATION OF THE MIDDLE EAR AND ITS COMPLICATIONS.

By W. Arbuthnot Lane, F.R.C.S., Assistant Surgeon to Guy's Hospital.

About the particular modes of treatment of inflammation of the middle ear and its complications much difference of opinion exists ; but I am convinced that the more experience a surgeon has of such conditions the more he will recognise the importance of interfering actively, and with as little delay as possible, should any indication for interference arise. In such cases, "if in doubt, operate." In no surgical condition is a surgeon called upon to act frequently upon less certain evidence, and with more skill and promptitude, and at the same time with perhaps less risk to the patient, than in some of the complications of middle ear disease, and especially in that form which consists in the collection of pus between the bone and dura mater, forming an abscess that may at any moment end fatally by bursting into the arachnoid cavity. In acute inflammation of the middle ear very great benefit may in suitable cases be obtained from leeching, free blistering, warm applications, irrigations, incision of the membrana tympani, &c. Some aural surgeons have ridiculed the possibility of any benefit arising from blistering and other forms of counter-irritation, and have given reasons for so doing which seem to me to be incorrect. I have certainly on very many occasions obtained most marked benefit from free counter-irritation in primary otitis media associated with much pain, swelling, and tenderness about the mastoid process ; and it seems to me that if counter-irritation produces any benefit at all, these are just the mechanical conditions for its application with advantage.

In my experience, complications of middle ear inflammation occur less frequently in a primary acute attack than in an acute attack intervening on a chronic otitis media, probably from the gradually progressive increase in size of the antrum in such cases. In all complications I should advise the adoption of a definite operative sequence, upon the principle that it is of vital importance in every case to attack the primary source of the disease—namely, the antrum—and by obliterating that cavity to remove any possible complication in future. It seems to me that in a case in which the complication is obviously cerebral abscess, it is ridiculous to be satisfied with draining the abscess, leaving the middle ear and antrum untouched, and the patient unsafe from a similar or other complication at a later date. The course I would suggest in any apparently complicated case is the following :—Expose freely and thoroughly the mastoid

process by any form of incision you prefer. Draw the ear well forward and define the posterior and upper margin of the external auditory meatus. The antrum lies just behind and above the posterior superior margin of the bony aperture. Remove the mastoid process with a gouge, using a heavy wooden mallet; the heavier the mallet within moderation the more easily and safely can the gouge be used. To use a trephine or drill is not only unsafe in the extreme, but inefficient for the purpose. I have found a fairly large gouge with a square edge suitable for doing the rougher part of the work, and small gouges with rounded cutting edges better for the more delicate portions of the operation. Much care must be taken in removing bone, as the dura mater of the middle or posterior fossa may be opened, and septic arachnitis result, or the lateral sinus may be incised. This last accident does not appear to be so frequently followed by serious symptoms as one would expect. Of course, in the hands of an unskilful operator the gouge is at least as dangerous as a trephine, or even the more useless drill, and I have heard of its being plunged into the substance of the brain, but with moderate care such accidents are readily avoided.

An important advantage of the gouge over the trephine is that it renders the surgeon independent of the varying relative positions of the lateral sinus, dura mater, and antrum. In cutting down on the antrum in inflammation of the mastoid process, if it contains pus or foul caseous material, I habitually expose the dura mater of the middle and posterior fossæ, without harm ever having resulted from so doing. It has been my good fortune on several occasions to expose in cases where there was no indication of their existence, small subdural abscesses in one or both fossæ, which, if left alone, would in all probability have terminated fatally. If the wall of the subdural abscess be formed wholly or in part by the lateral sinus, unless clinical evidence of septic thrombosis exists in the form of succeeding rigors, it is not necessary to do more than remove the pus and clean the dura mater. This I have found quite sufficient in several cases. If, however, with succeeding rigors the sinus is thrombosed, the jugular vein should be tied below the clot, the clot removed, and the sinus and vein irrigated and drained. (This mode of treatment was, I believe, originally suggested by Mr. Victor Horsley, and has been frequently carried out with complete success.) If the sinus is obviously not completely thrombosed various measures may be adopted. It is difficult to argue from the results of individual cases as to the advisability of adopting any one universally. For instance, in a case of subdural abscess involving the wall of the lateral sinus, which was not

thrombosed, and which was associated with successive rigors, I ligatured the internal jugular vein preparatory to ligaturing the sinus outside the torcular, and opening it up at the seat of the abscess. Severe symptoms followed the ligature of the jugular vein, and necessitated my postponing further treatment. The patient had a rigor on the following day. Then, on exploring the sinus with a view to ligaturing it, it was found to be completely thrombosed in the area exposed. No further operative measures were adopted, and the child recovered without a bad symptom. With this satisfactory result I would contrast another apparently identical case. A small subdural abscess involved the wall of the sinus, which was not thrombosed. As in the last case, there had been several rigors. The internal jugular vein and the lateral sinus outside the torcular were ligatured, the opening of the sinus at the seat of the abscess being postponed to allow of its thrombosing, as in the preceding case. Unfortunately, in the interval, the thrombosis extended along the petrosal sinuses to the cavernous sinus, and a fatal termination ensued. If I had opened the sinus, and plugged it at the time of the operation, as I shall always do in future, I should probably have saved my patient. I was, however, influenced by the progress of the last case, and did not wish to expose the child to any risk which could be avoided. The same treatment would apply to septic thrombosis involving a radicle of the lateral sinus. It has been recommended that after the vein has been tied in the neck, the sinus, though not thrombosed, be opened where exposed, and not also ligated outside the torcular, on the ground that it would be difficult to keep the last wound aseptic. It seems to me that the risk of infection would be small as compared to the advantage which would be gained by the closure of the sinus preparatory to its being opened, which could then be done thoroughly and leisurely. If the opening of the sinus, with the subsequent plugging, can be done effectually where it is exposed without previous ligation, the slight risk of infection consequent upon the passage of a ligature might be avoided. I have not yet read of any case in which a sinus which was not thrombosed or ligatured outside the torcular was deliberately opened and plugged, but from what I have seen of the hemorrhage which results from a tear in a sinus in fracture of the skull, I should imagine that one's view of the parts would be obscured a little by the free flow of blood, and that the removal of any septic thrombus, the introduction of a sufficient plug into the sinus, and the subsequent thorough irrigation and cleansing of the middle ear might be accompanied by some difficulty. This may be partly obviated by using a plug of fine catgut. Having failed to find anything so far, the cerebrum

or temporo-sphenoidal lobes may be thoroughly explored by a fine aspirating needle, through the areas of the dura mater of the middle and posterior fossæ which have been exposed behind and above the meatus ; and if pus is found, the abscess cavity may be drained through this opening in the skull, or a separate opening may be made, as may seem advisable. I have never experienced any difficulty or evil result from needling in this manner in this region. The pus from the cerebral abscess is often very foul, and the point of opening here indicated bears in the large majority of cases a very suitable relation to an abscess either in the temporo-sphenoidal lobe or cerebellum ; and it seems to me that in a large majority of cases it is the best place to utilise for this purpose. In any case, whatever else is done, the antrum must be obliterated, and the possibility of its again existing as a cul-de-sac removed by bevelling down the bone, so that its inner wall forms the floor of a deep excavation. At the same time the middle ear should be thoroughly cleared and cleansed, any remains of membrana tympani removed, and a large communication established into the back of the middle ear. Much care must be exercised at this stage to avoid injury to the facial nerve and to the inner wall of the tympanum. For cleansing the middle ear, I leave a silver drain in position, so that its end rests upon the floor of the antrum, and I trust largely to frequent irrigation, and to free introduction of glycerine and iodoform to obviate septic conditions. I do not think one can rely on any single irrigation of the middle ear, &c., however powerful the antiseptic used. If no pus is found beneath the dura mater or in the brain, and clinical evidence of meningitis exists, we may conclude that it is primary, and probably due to the extension of inflammation along the sheath of the seventh pair of nerves, and that no treatment can be of any service. In chronic middle ear disease, where there is much deafness, foul discharge, recurrent attacks of pain in the mastoid process, &c., I have, after the failure of ordinary treatment, cleared the middle ear and obliterated the antrum, restoring to the patient in most cases more or less perfect capacity for hearing ordinary conversation, a freedom from discharge, and an absence of subsequent risk from complications. In this, as in the previous similar operative treatment already described, the patient for the future irrigates the middle ear once a day with warm water, then introduces a drop of glycerine and iodoform into the meatus, and then a plug of cotton-wool, or a compressed cap of the same substance is inserted in order to prevent evaporation. By these means the functions of the antrum and of the membrana tympani are replaced artificially and satisfactorily.—*The Lancet, September* 26, 1891, *p.* 700.

OBSTETRICS AND GYNÆCOLOGY.

82.—ON SPURIOUS PREGNANCY.

By F. W. N. Haultain, M.D., Physician for Midwifery and Diseases of Women, Royal Public Dispensary, Edinburgh.

Though by no means rare, cases of spurious pregnancy are always of interest. Thus it is that, having had under observation three well-marked examples of this curious phenomenon, I venture to bring forward this short treatise on the subject. To briefly state the cases, they are as follows :—

Case 1.—Nullipara, aged forty-six, married many years, ceased menstruating, and in due course quickened, and developed a prominent abdomen. She was also a martyr to severe "morning sickness." The local medical adviser naturally pronounced her pregnant, and it was arranged that she should be confined in this city. Suitable apartments, nurse, &c., were accordingly engaged, and the lady came to town a month before the expected date of the confinement. At that time, upon casual observation, her advanced pregnant state seemed quite apparent. Labour pains arrived with the utmost precision upon their specified date, and upon being called in to manage the labour my consternation can be better imagined than described when I state that I found the uterus small and retroverted, while on percussion the abdominal tumour gave a tympanitic note. The announcement of the condition, I need hardly say, was a great blow to the would-be parents, a direct heir being in great demand to inherit their not inconsiderable estate.

I may add that, on careful examination, except the distended abdomen, no further signs of pregnancy were apparent, the breasts being small and flaccid, while no areola was manifest. Upon complete anæsthesia the abdominal swelling completely subsided.

Case 2.—A multipara, aged forty-eight, sent to the Maternity Hospital for a "doctor" (student), as she was about to be delivered of her thirteenth child. A tyro was accordingly sent, accompanied by the orthodox duet of nurses. They, after a long and watchful night, became alarmed at a little hemorrhage which was taking place, and sent for assistance. On arrival I found the woman to be suffering from a pretty advanced carcinoma of the cervix, and quietly telling her of her mistake was roundly denounced as ignorant.

The signs of pregnancy in this case were not well marked; the abdomen, though distended, felt flabby, while the breasts were soft and flaccid, and contained no milk. The symptoms

which had led the woman to believe herself pregnant were the cessation of menstruation and (apparently) active fœtal movements, associated with other minor symptoms which she had found to be associated with her previous pregnancies.

Case 3.—A multipara, aged thirty-six, four children, youngest six years, considered herself pregnant about eight months, and came to consult me about her courses, which she said had continued through her entire pregnancy without any irregularity. She dated her period of pregnancy from the time of quickening, and a number of other minor symptoms, morning sickness, &c., which she knew from experience as indicative of that condition. Upon examination the abdomen was distended quite in accordance with the date of the pregnancy. It felt tense and hard, but gave no resonant percussion note. The breasts were large, heavy, and full of milk, which could be squeezed out in considerable quantity with ease. The uterus was normal in position, and slightly enlarged. On passage of the sound it entered $3\frac{1}{2}$ inches, while a small fibroid was situated in the anterior wall. When told of her mistake my statement was received with incredulity, and even at the present moment she believes she was pregnant, but that I "took it away" when I put her under chloroform—for some further observations I wished to make—at a later period. The patient stated that the fœtal movements were well marked, and at times even troublesome, while for four months she suffered more than usual from morning sickness.

After such an experience as detailed, one cannot, I think, agree with Pajot and Charpentier when they say "there is no such thing as spurious pregnancy." The cases before us simulated pregnancy, and it alone, in so far as it was possible without being the actual condition. No other state, either physiological or pathological, could be mistaken for it on subjective examination even by the veriest tyro; therefore, to me it appears strange and worthy of notice that two so well known and eminent authorities should make such a statement in the face of so many similar recorded cases.

Granted that there is such a condition, we naturally turn to inquire what the condition is, and how it comes about?

Many explanations have been given regarding the first query, such as wind in the womb, flatulent distention of the intestines, and excess of fat in the omentum.

Any of these, however, must be considered to be far short of the whole truth when we know that, in the great majority of cases, complete anæsthesia entirely dissipates the abdominal tumour. Evidently, then, the abdominal distention is in many cases entirely due to muscular contraction of a more or less complex nature.

The muscles chiefly involved are the recti, obliques, and transversalis abdominis. These, if contracted, will give a decided prominence to the abdomen, a state of matters which was quite new to me till one day, after tapping a patient (for the fifty-second time, I may add) who was suddenly seized with a violent cough, with the result that the abdomen was protruded in a most marked manner: a process which was repeated (although with much more prominence of the recti), when he attempted to raise himself from the reclining to the sitting posture.

An exactly similar condition was again demonstrated to me by a patient who suffered from severe vomiting immediately after the removal of a large ovarian tumour.

Having these cases on my mind when I saw patient No. 3, I determined to try the result of an electric current through the muscles of her abdomen, when they were flaccid during anæsthesia.

The result passed expectation—a faradic current through the abdominal muscles causing the most marked prominence of the abdomen in a manner quite analogous to her condition before anæsthesia.

A similar purely muscular distention of the abdomen I have frequently felt during and after the third stage of labour, which rendered a grasp of the uterus most difficult to obtain.

As a result of this distention of the abdomen the intra-abdominal pressure will naturally be much diminished, and thus allow of much flatulent distention of the intestines—a condition which, being naturally generally associated with the prominent abdomen, has been frequently looked upon as the cause instead of the effect.

Such, then, being an explanation of the factors in this strange process, one naturally looks for an explanation of the prime cause—a much more difficult question.

On looking over the published cases it will be noticed that the great majority of examples have been furnished by women at the menopause, while the others have been associated with disease of the generative organs or vitiated mental conditions. We must, therefore, consider our essential cause primarily as purely nervous, but we can go still further, and subdivide it into two varieties, mental and reflex. The former is generally exemplified by the wish being father to the thought—women at the change of life clinging closely to the cherished ideal of their sex, and relinquishing it with reluctance. But again, it is occasionally due to fear, the result of some illicit intimacy, as is well exemplified by a case described by Gooch.

That it is frequently, however, quite independent of purely mental origin, Cases 2 and 3 give excellent proof. Neither were

desirous of having children ; one had already had twelve and was barely able to support them, while the other personally told me she would rather not be pregnant, and seemed grateful at my supposed clandestine removal of the offending member. Both suffered from distinct pathological states of the uterus, and I think we may legitimately infer that the abnormal condition was entirely of a reflex nature—an origin leaving little to imagination, when one considers the intimate nervous relations which exist between the uterus and abdominal muscles in the lumbar plexus.

To account for the cause of the other signs of pregnancy in any more lucid manner than by generally attributing them to nervous influences is hopeless ; details are a mystery. But if, as is well known, sudden nervous impressions are sufficient to inhibit the secretion of milk, there seems no reason why other nervous impressions may not react in an opposite manner.—*American Journal of Medical Sciences, April*, 1891, *p.* 342.

83.—ON RAPID DILATATION OF THE CERVIX AND UTERINE CAVITY BY HEGAR'S GRADUATED BOUGIES.

By John Phillips, M.D., M.R.C.P., Assistant Obstetric Physician to King's College Hospital.

The recognised methods of dilating the cervix and uterine cavity for various morbid conditions are numerous, but I think they may be classed into four principal groups, namely :

1. Gradual dilatation by sponge, laminaria, or tupelo tents, the process requiring at least twenty-four hours to effect the desired result.
2. Lawson Tait's continuous elastic dilatation by means of special bougies, the treatment extending over a somewhat indefinite period.
3. Rapid dilatation by means of Hegar's bougies, Hank's or Duncan's dilators.
4. A combination of tents and dilators.

The disastrous effects, especially of a septic nature, often following the use of sponge tents, are well known to every practitioner, and although these accidents are not so liable to happen with laminaria and tupelo tents, still their use is not unattended by danger, and it is with the object of bringing the results of a somewhat extended trial of Hegar's dilators before the profession that I have made this contribution.

There are two positions in which these bougies may be used:

1. In the dorsal decubitus, when a Sims's speculum is necessary to retract the perineum and posterior vaginal wall; a volsella is then used to seize the anterior lip of the cervix and steady the uterus, and the bougies are then inserted in succession.

2. In Sims's left lateral decubitus, when a speculum is not wanted, nor is the volsella. But I have used regularly an instrument invented by Dr. M. Handfield-Jones, and have found it of such great value that I should now never think of attempting to operate except with its aid. It consists of a strong pair of forceps with a powerful catch on the handles; the distal ends are hollowed out into two cavities, which, when applied on either side of the bougie handle, hold it perfectly tight and rigid; the first and second fingers of the right hand are introduced into the vagina and the point of the dilator inserted into the cervix; pressure is made as in the operation of perforation of the fœtal skull, the forceps being held backwards in the line of the pelvic axis—that is, if the uterus is normally situated—and after a longer or shorter period the cervix gives way and the dilator passes in. After being retained there for two or three minutes, as circumstances require, the forceps is slipped off and applied to another of the next size, the already introduced one extracted, and the fresh one inserted in the same way. Hegar's dilators are made in sizes from 1 to 26. I found that numbers 1 to 7 were fragile, and therefore had a set of solid steel bougies made and numbered from 1 to 14, somewhat after Duncan's model. These have a circular depression at a distance of $2\frac{3}{4}$ inches from the blunt intrauterine end, and on the site of the usual angle. No. 14 is slightly smaller than No. 8 Hegar, so that a continuous graduated series is at the operator's command, from No. 1 steel bougie to No. 26 Hegar—that is, from the size of a circle with a diameter equal to that of a very small sound to one with a diameter of $1\frac{1}{8}$ inch. With such an amount of dilatation I feel quite sure that any gynæcological operation can be performed—and, indeed, version in an early pregnancy, as is related by Dr. Lewers.

I have never so far met with a case of cervical laceration in my own practice, although I am aware that such lacerations do occur, and are considered a serious drawback to this method. I believe, however, that they happen entirely as the result of passing the bougies into the cervix too rapidly, and not allowing one to become loose in the cavity before removing it and inserting a larger one.

The advantages of this mode of treatment appear to be: (1) the necessity of no assistant beyond the anæsthetist; (2) the great power which can be brought to bear on the point of the

dilator at the os uteri; (3) the great facility that exists of graduating this power; and (4) the ease with which antiseptic precautions can be carried out.

The only disadvantage that I am aware of is that in patients who are unable to take an anæsthetic in Sims's position—thus rendering the dorsal decubitus necessary—its feasibility is not so great. The importance of the strict use of antiseptics in conjunction with these dilators cannot be too rigidly insisted upon; the bougies should always lie in a flat tray, the antiseptic solution being made as hot as possible and of the proper strength by the addition of boiling water. The choice of the mixture used depends much upon the circumstances under which the operation is performed. In the appended 31 cases I have resorted to the use of five—and I think reliable—reagents.

The solution of perchloride of mercury (1 in 2000) was used in 13 cases, carbolic acid solution (1 in 40) in 10 cases, iodine and water (of a dark sherry colour) in 2 cases, Condy's fluid and water in 5 cases, and creoline (Jeyes' preparation) in 1 case. I make it a rule to take pellets of the corrosive sublimate with me, so that three of these make the necessary standard solution with boiling water; the dilators should be just covered in this fluid in the flat tray.

For the vaginal douche, before and after the operation, I usually employ iodine, especially if an intrauterine injection is necessary; the only disadvantage I have so far experienced was in a case where an urticarious rash appeared within forty-eight hours over the whole body, and was doubtless due to iodism. Although creolin was found to be bland and unirritating to the vaginal tract, its opacity prevented the numbers on the dilators being seen when lying in the tray, and its penetrating smell was, in addition, intensely disagreeable.

As regards the amount of dilatation necessary in each case, I found that up to Hegar 12 was requisite for swabbing out the uterine cavity, up to 20 or 22 for removal of placental remains, and up to 26 for any intrauterine manipulations, such as incising the capsule of a fibroid, or applying the *écraseur* to a polypus. If the case is one in which it is not needful to dilate the uterus above Hegar 12, I swab out the cavity well with iodine tincture on cotton wool, or, in certain cases, with fuming nitric acid. If above that dilatation is necessary, the intrauterine injection is best given with the double-barrelled celluloid tube, or that of Bozeman modified by Fritsch.

Indications for the Operation.—(1) For hemorrhage after incomplete abortion and removal of the remains of the decidua; (2) For repeated hemorrhage in the non-pregnant condition where other remedies have failed and other sufficient causes absent; (3) For dysmenorrhœa and sterility from stenosis of

the cervix ; (4) For examination and treatment of the various conditions of the endometrium by means of the curette and otherwise, that is, in malignant disease, fungous, and gonorrhœal endometritis ; (5) For removal of intrauterine tumours. It may be mentioned here, also, that it is a not uncommon experience to find that the mere dilatation will often arrest hemorrhage when no morbid condition can be discovered.

Summary of Cases.—Of 31 cases 12 were operated upon for causes directly arising from pregnancy, that is, from retained and adherent products of conception ; of these, one required a secondary dilatation, and as there are some interesting points in its course it is given more fully later on. In 3 cases, septic symptoms had commenced, and although in two they disappeared at once after operation, in one they continued (although the hemorrhage ceased), and ultimately terminated by a left femoral phlegmasia and a prolonged period (11 months) of amenorrhœa.

On removal of the placental remains, the patients made a rapid convalescence, no cellulitis or febrile symptoms arising in its course. The time occupied by the operation was as much as 65 minutes in one case and as little as 18 minutes in another ; so that the cervical pregnancy-softening does not facilitate the dilatation as one would suppose.

The only case in which I used preliminary dilatation by bougies of sea tangle did not occupy any shorter time than usual, the operation lasting forty minutes.

The cases of dysmenorrhœa and stenosis, attended by sterility in those who were married, were six in number. The immediate results were evident in four cases in that pregnancy followed. In two it will be seen that relief was only temporary.

Of gonorrhœal endometritis I have met with three typical instances. In all of them the antecedent history was quite clear, and the usual remedies and vaginal injections had been used with a negative result. Dilatation up to Hegar 12 was found sufficient ; a yellowish gelatinous material came away on the bougies, and was probably diseased endometrium. Nitric acid was applied in two cases with good results, but in one case I injected gently into the dilated uterine cavity a drachm of the Edinburgh tincture of iodine ; in this case the Fallopian tubes were apparently beginning to be affected, and it was thought that the penetrating effect of iodine would be here of great value.

The above facts speak for themselves, and I cannot but conclude that, for exploration of the uterine interior and treatment of any disease there, this method of rapid dilatation is much superior to any other, both in rapidity of completion and absence of septic sequelæ.—*The British Medical Journal, May* 23, 1891, *p.* 1119.

84.—ON REPAIR OF THE FEMALE PERINEUM.

By Lawson Tait, F.R.C.S., Professor of Gynæcology in Queen's College, Birmingham.

When there is absolutely no interference with the function of the sphincter the essential elements of the perineum are either not dissevered, or, if dissevered, are not so separated as to lead to the necessity of what may be fairly termed the major operation. All such cases I call "damaged perineum," as contradistinguished from "torn perineum," for the same effects may be produced by mere stretching, the result of vaginocele or uterine protrusion, in cases where no labour has ever resulted, even in the "inevitable laceration" of Matthews Duncan. This damage of the perineum, even when due to mere stretching, may result in its almost total disappearance up to the outside of the ring of the sphincter. It requires a minor operation for its treatment, to which I give the name of "extension of the perineum," a proceeding of great value in many different conditions. There are also exceptional cases of "torn perineum" with many of its inconveniences where the sphincter is not even damaged. There are rare cases where the passage of the head tears a minute hole in the recto-vaginal septum, just above the sphincter, and then passes out without serious damage to the perineum itself. In such instances there is a continual weeping of fæces into the vagina of a most disagreeable character, and very often a most disagreeable symptom in the noisy and involuntary escape of flatus through the aperture. These cases require treatment exactly as if they were complete ruptures.

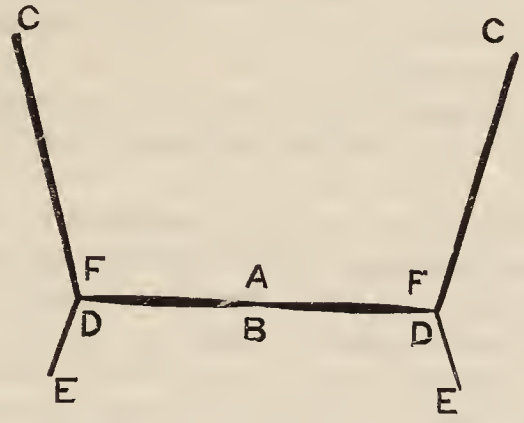
It will thus be seen that I divide my cases into those of "torn perineum" and "damaged perineum," and I apply to them severally the operations for "complete repair" and "extension" of the perineum. The principles involved are three, one being applied to both sets of cases, the principle of flap-splitting; and the second, the disinterment of divided structures, which is required only for the cases of repair of complete rupture. Then, thirdly, there is the method of the insertion of the sutures, which is common to both.

The method of performing the operation for the extension of the perineum is very simple. The patient is anæsthetised, placed on her back, the limbs being secured by Clover's crutch, a contrivance of great value in all operations on the external genitals of women. With the finger in the rectum and a pair of sharp elbowed scissors, the vaginal lips being held open by assistants, I make a deep notch in the skin and mucous membrane, deep enough to lay bare the ring of the sphincter. This I do for the purpose of disinterring any important elements of the perineum which may have been separated by the

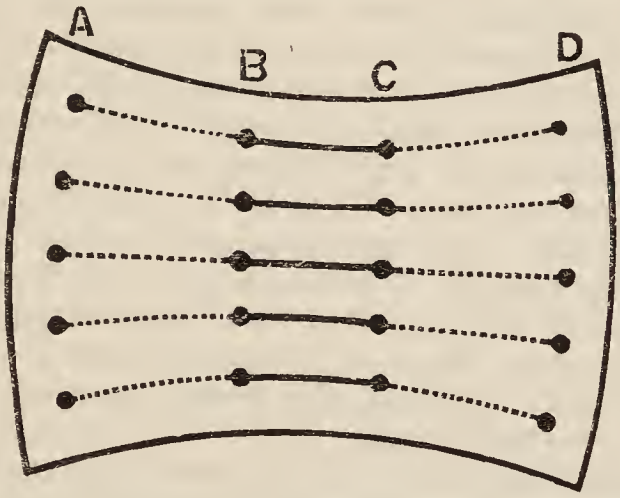
stretching, or, if it has been a case of partial rupture, by the tearing. Turning the scissor points first on one side and then on the other at right angles to the incision from this middle point I run them straight up the body of the great lip close to its mucous margin. The depth of the incision will vary according to the strength of perineum I want, but it must always be through the skin and mucous membrane and well into the lip, at least a quarter of an inch. The incision is carried as far forwards as I deem it requisite; in cases of complete protrusion of the uterus, where I intend the extended perineum to act as a pessary for retention, I carry the incision almost up to the urethra and make it deep, three-eighths and even half an inch, so as to secure a strong firm floor for the support of the extruded organs. Separating the lips of each incision I pass sutures of silkworm gut with handled needles into the raw surface and entirely open the wound surface, keeping the entrance of the needles within the margin of the wound just within the skin edge. The thread is brought out on the mucous side of the wound, a little distance from the mucous membrane, and again on to the surface of the wound. This suture is carried behind the angle of the wound so that, as I say, the structures in the body of the labia which are exposed by the incision are disinterred, as it were, and brought to the surface, the edges of the wound being really reflected outwards by the process of closure. The suture from the one side is carried across to the other, and then, when pulled tight, a large flat area of raw surface, constituted practically by the bodies of the two great labia, is brought into apposition. The deep sutures alone are enough to secure this method of union, and great care must be taken to put one of the stitches close to the sphincter so as to disinter and bring into close apposition any structures which may have been separated in the process of stretching or tearing.

Three, four, or five sutures may be required for this. They are very rapidly inserted, and the wound heals very rapidly. There is very seldom any trouble from bleeding, and the tying of the stitches is generally quite enough to arrest it. There is no hurry in taking out the stitches, which may be left from ten to thirty days till the wound is perfectly healed; some care must be exercised on the part of the patient during the first two or three months after the operation, if it is performed for protrusion, that no undue strain is put upon it; of course it is inclined to stretch, but if fairplay be given to it, and it is allowed to unite firmly before any further stretching is put upon it, it will keep the parts completely up, and will be found far more effective and far more comfortable to the patient than any pessary, even in cases of the most complete protrusion.

The following description of the two diagrams is given from page 68 of my book on "Diseases of Women":—



The vaginal flap A is held upwards (the patient being on her back) and the rectal flap B being turned downwards, the angles A F C being pulled by forceps diagonally upwards and inwards towards the middle line, and the angles B D E being pulled downwards and inwards. The lines C E thus become curved in the other direction, and the wound takes this form.



By means of a stout-handled and well-curved needle, the silkworm gut sutures are entered on one side about an eighth of an inch within the margin of the wound (so as not to include the skin) at the dots A. They are buried deeply in the tissue as far as B, and then the needle is made to emerge so as to miss the upper angle of the wound. The needle again enters at the large dots C, and emerges at the dot D. By thus missing the upper or deep angle of the wound between B and C, the two great and divided masses of the old perineum which lie in the parallelograms respectively bounded by the lines of large dots A B and C D are accurately adapted. The rectal and vaginal flaps respectively *pout* into the rectum and vagina, and, like an old-fashioned flap valve, prevent noxious material entering the wound.

I have cases now in which the operation has been performed 13, 14, or 15 years, in which the miserable condition of the patient has been transformed into one of perfect comfort, and for durability it excels in results those I have seen from the operation of shortening the round ligaments and bearing up an extruded uterus on that slender suspension. Sometimes it may be found that the extension has been carried a little too far

forward, but a little care by dilatation, or even a slight notch with the scissors, will remedy this, but it is well to warn married patients that at first some little discomfort may arise from the extension being carried too far forward, but that this in time will remedy itself.

Here it will be seen that the two principles involved in the operation are those of flap-splitting and disinterment by sutures.

The operation for the repair of a completely torn perineum is to be conducted as follows:—The position of the patient being similar to that in the first, the cicatrised margin of the septum is put tightly on the stretch by two assisting hands, and the point where the white lines on each side meet the transverse line are carefully noted. Exactly at this position the point of the scissors is inserted deeply, at least half an inch, and from that they are run transversely along the white line, making a diminishing incision to the centre of the torn septum, where a quarter of an inch is quite enough. The scissors run on again through the other half of the torn septum, the incision must correspondingly deepen till it reaches the point of contact of the short line which forms the corresponding limit of the transverse incision. At this point, and as in the first instance, again very carefully an incision is made about an inch and a half or three-quarters of an inch forward in the direction of the incident or lateral line, and similarly about a quarter or three-eighths backwards. This is done on each side. A touch of the scissors at the bases of the large angular flaps thus formed enables these flaps to be raised and a deep lozenge-shaped wound to be exposed, this wound forming practically a reconstitution of the original tear. If it is considered for a moment what the tear is, it will be seen that at the time of its original infliction a lozenge-shaped wound is produced, the long axis of which lies between the centre of the anus and the centre of the vagina. In process of healing, the long axis of this wound is gradually brought to a position at right angles to that of its original existence, so that, as the wound becomes healed, its long axis corresponds to the new edge of the torn septum. What is wanted then is to reconstruct the original wound and to bring the labia back to their original positions. This is done by inserting stitches within the skin edge on each side, passing from one side to the other as before described, thus forming the original edges of the destroyed raphe. The advantage of the deep incision is that it disinters all the torn structures of the ordinary perineum which had been dissevered. In the process of suturing it is always advisable to enter the middle suture first because it requires to go deepest, and it governs the symmetrical rearrangement of parts.

Taking an empty-handled needle I insert it deeply in the structures immediately within the skin margin and bring it out about three-eighths of an inch from the central apex of the wound and absolutely midway in the divided septum between the vaginal mucous and the rectal mucous flaps. Jumping over a small piece of the apex of the wound I re-enter it on the other side at a corresponding point where such exit was made, push it deeply into the textures again, and bring it out immediately under the skin of the opposite side corresponding to the point of its original entrance but within the skin edge. I then pass a silkworm-gut suture, as before described, and draw it tight. This determines the position of the flaps, and as many corresponding sutures may be put in front of it and behind it as are deemed requisite. I generally find three quite enough, or four or five at the very outside are sufficient. Tying the middle stitch first will be found to bring the edges of the skin almost into apposition. If it is very skilfully placed it will bring them absolutely into apposition. The stitches on either side are then very carefully tied, and the operation is finished. It is always advisable to secure the edges of the two rectal flaps by pairs of catch forceps so as to put them on the stretch, and make sure that the raw edges are brought into contact when the sutures are closed. Similarly the raw backs of the flaps of the vaginal mucous surface are brought into contact by the deep sutures, no stitching of the rectal or vaginal flaps is in the least degree necessary, for they are held in their place without any kind of stitching, and are better left untouched. The newly-formed raphe, however, may want one or two supporting stitches in it to bring its two edges accurately together. In this way the operation is finished, and a perfect result may be anticipated if attention is paid to the cleanliness of the parts every day by washing out the vagina, and the administration of soap and water enemata. No hard fæces must be allowed to lodge about, and if any tendency to constipation exists the use of purgatives must be freely indulged in.

Many curious accounts of the operation which I have proposed have been submitted to the medical public with my name attached to them, a great many improvements have been suggested, all of which, so far as I have seen them, I have submitted to my careful consideration without seeing my way in some instances even to try them, or in others to adopt them permanently after trial. Amongst them may be mentioned the suture pins of Marcy, which form an unnecessary complication by the provision of a special apparatus. All kinds of special implements and methods of work I deprecate.—*The Medical Press and Circular*, *July* 8, 1891, *p.* 26.

85.—SIXTEEN CASES OF COMPLETE AND OF SUPRA-VAGINAL HYSTERECTOMY FOR CANCER.

By James Braithwaite, M.D.Lond., Obstetric Physician to the Leeds General Infirmary, President of the North of England Gynæcological Society, &c.

In an interesting paper published in the *British Medical Journal* of January 10, 1891, by Dr. Thomas Keith, he says:—"I have often wondered why vaginal hysterectomy is so seldom performed in this country"—and he then observes that he thinks perhaps "it has fallen through between the surgeon and the gynæcologist." To this I may reply that the operation has not fallen through in the North of England at any rate, for it has been done by Professor Japp Sinclair of Manchester over thirty times, by Professor Wallace of Liverpool about thirty times, by myself twelve times, and by Dr. Keeling of Sheffield several times. In London the operation has been done a considerable number of times by Dr. John Williams, Dr. William Duncan, and others. The real reason the operation has not been done oftener is given by Dr. Keith himself: "Unfortunately, the number who are alarmed in the curable stage is few." Possibly one reason why the Continental surgeons have been able to do this operation so much more frequently than we have here had the opportunity, arises from the Germans being naturally more nervously alive to their ailments and as to the possible import of symptoms. This leads them to seek advice early. Here we usually see the cases too late. It would be, however, unfortunate if this operation were taken up too freely, for the cases suitable are so comparatively rare that it would get into disrepute. It has its place, and, if in its place, it has its value, and shows good results.

Of the sixteen cases referred to in this paper, twelve were complete removals and four supra-vaginal only, *i.e.*, the cervix up to and a little above the os internum was removed. All the operations were done at the Leeds Infirmary.

The following table gives a *résumé* of the twelve cases of complete removal. The first was done six years ago, and was the first operation of this kind done in the Leeds Infirmary, and, I believe, in Yorkshire. I examined the patient six months after the operation and there was no return of the disease, and she wrote from Stockton-on-Tees thirteen months afterwards to say that she continued well and was removing to Middlesborough. With some difficulty, and by the help of the brother of one of the Infirmary nurses who comes from that town, I was able to trace her eighteen months since, and she still continued so far as she could tell quite well. Presumably she is still so.

TABLE OF TWELVE CASES OF COMPLETE REMOVAL OF UTERUS PER VAGINAM.

No.	Age, &c.	Form of Disease.	Date.	Results.
I.	E. S., 38, multi-para	Round-celled sarcoma of body of ut.	Nov. 14, 1885	Recovered. Examined six months after and well. Wrote thirteen months after to say well, and ascertained to be well in April, 1890.
II.	E. L., 50, unmarried	Epithelioma of body of ut.	March 19, 1887	Recovered. Disease already penetrated ut. Died six months afterwards.
III.	E. A. P. 33, i.-para	Cauliflower excrescence	July, 1887	Recovered. Examined Sept. 25, 1891. No return.
IV.	M. A. H. 58, multi-para	Squamous epithelioma of portio, rather advanced.	Oct. 29, 1887	Recovered. Died two years after. No recurrence.
V.	A. E. W., 40, multi-para	Epithelioma of cervical canal.	Nov. 1887	Recovered. Jagged opening in uterus from penetration by disease. Died a few months after.
VI.	E. M., 28, ii.-para	Squamous carc. of portio, extending deeply.	March 31, 1888	Recovered. Disease rapidly returned.
VII.	J. W., 43, v.-para	Cylindroma of cervical canal.	March 15, 1890	Died from suppurative peritonitis. Operation difficult and prolonged.
VIII.	E. S., 38, xiii.-para	Large cauliflower excrescence.	March 21, 1890	Recovered. Remains well. (Examined Sept., 1891.)
IX.	J. M., iii.-para	Squamous epithelioma of portio.	Nov. 1, 1890	Recovered. Remains well, Sept., 1891.
X.	J. A., 39, viii.-para	Squamous epithelioma, large and advanced.	April 11, 1891	Recovered. Died ten weeks after from return of disease blocking ureters.
XI.	M. A. C., 52, viii.-para	Squamous disease, invading vaginal wall.	May 14, 1891	Recovered. Examined Sept., 1891, and signs of disease returning.
XII.	M. E. P., 38, multi-para	Squamous epithelioma, rather advanced.	July 11, 1891	Recovered. Disease just beginning to return Oct. 8. 1891.

Thus out of the twelve cases only one died owing to the operation, and this death was from acute septic peritonitis. The operation was difficult and prolonged owing to the size of the uterus. In two of the cases the disease was found at the time of operation to have already penetrated the uterus (cases II. and V.), and these of course died. In both there were jagged apertures, with yellowish sloughy-looking edges.

Of the remaining nine cases, the disease returned in four, viz., cases VI., X., XI., XII., and in all the return was so rapid that there can be little doubt it had already at the time of operation spread into the surrounding cellular tissue, and in one the vagina was involved and was cut away all round the cervix.

In the remaining five cases there has been no return in Case 1 after four years and five months, and presumably, after six years ; in Case 3 after four years and two months. In Case 4 after two years, when she died from gradual exhaustion. She was sixty and looked like seventy, and very thin and feeble. There was no disease discoverable by vaginal examination nor by abdominal palpation, and the parietes were so thin and flaccid that deep palpation was easy. If there had been any return in the deep parts of the pelvis or lumbar glands, it would have been easily felt. In Cases VIII. and IX. there has been no return after eighteen months and eleven months respectively. Both were examined, as were all the other cases except the first, during the last week of September and the first of October. Excluding therefore, the fatal case and the two in which, at the time of operation, the disease was found to have penetrated the tissues of the uterus by visible openings, there remain nine from which we may judge of the utility or uselessness of the complete operation. Of these nine, five remained without return after periods varying from eleven months to four years and five months (and presumably six years). Five lives, therefore, seem to have been saved for one lost by the operation. By my careful selection of cases, better comparative results could be obtained best with a smaller number of cases. The temptation is to do the operation in doubtful cases, to give the patient the chance of success. Several times I have attempted the operation, and found it could not be carried out, owing to the advanced stage of the disease. As no fatality has resulted in these cases, I have not noticed them. In the operation itself the most important question is how to treat the broad ligaments, whether by ligatures or pressure forceps. It is well to have both at hand. Where ligatures are used there is the temptation te trim off the small bunch of tissue on the uterine side of the knot rather too closely, and as the part tied tends to shrink, the ligature is liable to come off by very slight traction. I have several times seen this occur. If pressure forceps are properly

made, and the nipping edges grooved deeply diagonally they cannot come off, so that they are more secure than ligatures, and moreover, the operation is shortened. The disadvantage of pressure forceps is that it is less easy to make the ends of the stumps of the broad ligaments extra-peritoneal. But even this can usually be effected by a little management, provided the blades are at the proper angle with the handles. In three of my cases pressure forceps only were used, in two partly pressure forceps and partly ligatures, and in seven ligatures only. The blades of these pressure forceps are so constructed as to make pressure equal, although the parts compressed are thick at the proximal edge and thin at the distal. (They are made by Messrs. Reynolds and Branson, Leeds.)

Only three modes of bringing the uterus out are possible, and the best of these is undoubtedly that of retroverting the fundus out of the posterior wound, and then drawing the whole organ outside, cervix upwards. The attachments can then be clamped or tied by sight. This was done in five cases.

In one the fundus was brought down out of the anterior wound. Neither in this nor in any of the five cases named was the cervix pushed upwards, towards, or into the peritoneal cavity. This seems a very improper place, and it is never necessary.

In the remaining six cases the uterus was brought down cervix first in a zigzag fashion, the attachments being tied in portions first on one side then the other. In one of these the broad ligaments were so short and inelastic that in addition the uterus was bisected. The best rule is to retrovert the fundus out of the posterior wound and bring the whole outside if possible; failing this, to try whether it can more easily be brought down out of the anterior wound; and if the attachments are short or inelastic to bring it down cervix first.

I have always brought together the anterior and posterior walls of the vagina at the summit; if possible passing the ligatures through the stumps of the broad ligaments so as to fix them in the wound. One strong catgut ligature is passed from behind forwards, and then reinserted and passed through the parts in the opposite direction, the two ends are then tied together. This does not prevent a little drainage if necessary. Several times a drainage tube was left in, but as nothing came away this plan in the later cases was discontinued.

In addition to these cases there have been done four supra-vaginal hysterectomies. The results were not so good as those from the complete operation. One died within twelve hours from shock and hemorrhage, but she was very anæmic from hemorrhage before the operation. In two the disease returned at intervals of respectively seven months and two

months. The remaining case is still free from disease. The operation was done on November 6th, 1886, and she was examined at the Infirmary on September 24th last, *i.e.*, nearly five years afterwards. The operation was very radical, for not only was the cervix removed just above the os internum, but a conical piece of the interior was also gouged out higher up, and the mucous membrane of the remaining part firmly scraped with a Volkmans spoon.

This, therefore, with the five permanent cures by the complete operation, makes six lives saved out of the total sixteen.

Although, undoubtedly, this supra-vaginal operation has its place, it should be a very limited one. I think it ought to be confined to early cases of squamous epithelioma. It is not only less safe as a means of eradicating the disease, but it takes longer to perform, and is quite as difficult as is complete extirpation. I think, moreover, there is greater danger of secondary hemorrhage. It is, however, decidedly preferable to complete extirpation in the cases named, and especially if it is not necessary to remove the cervix so high as the os internum. Both posteriorly and anteriorly a funnel-shaped excision of the mucous membrane should be made. In 1876 I removed the cervix only in this way, and the patient remained well for twelve years. She then came amongst the Infirmary out-patients with cancer of the interior of the uterus. I have not included this case with the others because it was not a proper case of supra-vaginal amputation.

The concluding sentence of Mr. Keith's paper is this: "Operated on at an early stage, uterine disease will show results *ot much inferior* to operations for cancer in other parts of the body." Three years ago I published my theory of malignancy. This has not yet been accepted by the profession, but it will be some day. According to this theory cancer of the uterus ought to show better results than the same disease in any other organ of the body removable by operation, and as a matter of fact it actually does. Proliferation is liable to occur in nearly all the tissues of the body, but it is only malignant when the proliferating cells are able to separate from each other, and are of the size and shape and hardness to penetrate the tissues through which they emigrate. The uterine tissue is such a dense and closely-woven fibrous network that it is probably penetrable with greater difficulty by what may be called travelling cells than any other organ of the body. The chance, therefore, of a permanent cure of cancer of the uterus by early removal is not, as said by Mr. Keith, "not much inferior to," but it is actually superior to that given by removal of the disease in any other organ of the body.

86.—ON THE OPERATIVE TREATMENT OF CANCER OF THE CERVIX UTERI.

By N. T. Brewis, M.B., Lecturer on Gynæcology in the Edinburgh School.

The operative measures which a surgeon will adopt in a case of cancer of the cervix depends on the apparent extent of the disease. The amount of involvement cannot be determined clinically. By well-known physical signs we can tell that the disease is not limited to the uterus, but by no means in our power can we ever say with certainty that it is limited. The results of hysterectomy and other operations, however, prove to us that cancer, unlike septic pelvic cellulitis, where the cellular tissue becomes almost simultaneously involved with the lacerated cervix, may confine itself to the cervix for a considerable time without infecting the surrounding tissues. If this were not true, the cases reported as cured years after hysterectomy had been performed cannot have been cases of carcinoma at all. On this point one case in my experience gives undoubted evidence. In May, 1884, Dr. Macdonald removed a large sloughing cauliflower excrescence from a patient aged 36, and to this day she remains well and free from return.

But it is only from the ultimate results of operative measures that we know the disease has been limited. The extra-uterine tissues may be infected without giving rise to physical signs.

From the operator's point of view, therefore, we may classify all cases as either—1st, those in which the disease is apparently limited to the cervix ; or, 2ndly, those in which the surrounding tissues are undoubtedly involved.

In considering the treatment of the first class of cases, the surgeon has to adopt one of two operations, viz., supra-vaginal amputation of the cervix, or removal of the entire uterus. Both operations have their advocates. Many hold that supra-vaginal amputation is sufficient, while others maintain that removal of the entire uterus is the proper procedure ; and that as a surgeon removes the whole breast for cancer, in like manner the entire organ should be removed for cancer of the cervix. Statistical evidence, till quite recently has been on the side of the lesser operation, the reason, perhaps, being that many of the cases amputated were not cancerous. But now that evidence is rather in favour of hysterectomy. Schauta claims 47·3 per cent. of definite cures in his cases of hysterectomy, considering as cured those which do not recur after two years. Hofmeier further gives 40·5 as the percentage of non-recurrence two years after amputation of the cervix.

To me it is inconceivable how better results could be got from removing a portion of the uterus rather than the whole, and I

would always advocate hysterectomy in preference to partial removal, simply because the disease is only apparently limited, and in removing the cervix alone we may leave behind an infected body. The results of hysterectomy for cancer are as good as those of excision of the breast for the same disease, and I believe they would surpass them, provided the cases were seen earlier. While pain is an early symptom in cancer of the mamma, it is often late in cancer of the cervix, and on that account we seldom see cases of the latter at an early stage, and consequently the breast surgeon has the advantage.

I cannot help thinking that medical men are to blame for not often suspecting cancer of the cervix. Many cases might be recognised earlier, if excessive menstruation between the ages of 40 and 50 were not so frequently attributed to change of life. These patients should always be examined with a view to eliminating malignant disease. The need of such an examination should be impressed upon us, and as a result cancer of the cervix would be more frequently recognised at an early stage, and hysterectomy would be made one of the most successful and beneficial of operations.

The surgical treatment of the second class of cases, viz., those in which the surrounding tissues are involved, can only be palliative, and must depend on the apparent amount of involvement.

If the involvement permit of hysterectomy—I mean, if hysterectomy is practicable—then I hold it is the proper operation to adopt. We do not know whether in such cases hysterectomy prolongs life, but it certainly must alleviate symptoms (particularly hemorrhage and discharge) more than amputation of the cervix, curetting, or cauterization can do, because it removes more of the disease.

When the disease has advanced so far that hysterectomy is impracticable, then curetting or cauterization should be practised, with the aim of removing and destroying as much as possible of the disease.

Operators differ in the technique of hysterectomy—first, with regard to the method of securing the broad ligaments; and, secondly, as to whether the opening in the vaginal roof should be closed by sutures.

In this country and in Germany ligature seems to be the favourite method of securing the broad ligaments, while in France and America pressure by forceps or clamps is most practised. The limitation of my experience of vaginal hysterectomy to three cases makes my opinion on this point of little value. Two of these were performed by Dr. Macdonald, who tied the broad ligaments; in the third I used clamps.

At present my opinion is decidedly in favour of clamps. They give perfect security against hemorrhage, are easy of application,

and render the operation a rapid, safe, and bloodless one. They can be used in cases where the uterus is fixed, they destroy more tissue than the ligature, and they can be placed further away from the uterus. Against their use is urged the danger of pressure, which may set up peritonitis, and lead to obstruction of the bowels. But, again, ligature is more difficult, takes up much longer time, and does not give such secure hæmostasis. There are exceptional cases, however, in which the clamp could not be used, *e.g.*, when the uterus is very large, and the broad ligaments are high up in the pelvis.

The majority of operators now close the wound by suturing it. They maintain that in leaving it open there is danger of intestinal obstruction. I think such danger is more apparent than real. If the parts are kept asceptic there should be no inflammation, and as the bowel has little tendency to prolapse, obstruction can only follow inflammatory action. It is also to be remembered that abscess formation sometimes occurs above the sutured wound. I do not think it is necessary to suture the wound, as the parts fall into apposition, and soon unite of their own accord. If you use clamps, they lie one against the other, and practically close the wound.—*Edinburgh Medical Journal, May*, 1891, *p.* 1002.

87.—NOTE ON THE VALUE OF IGNIPUNCTURE IN THE TREATMENT OF HYPERTROPHIED CERVIX UTERI.

By Alexander Duke, F.R.C.P.I., Ex-assistant Master of the Rotunda Hospital, Dublin.

The length of time occupied by the usual routine treatment of a case of chronic hypertrophied cervix uteri can be considerably shortened by the judicious use of ignipuncture. The usual plans of treatment—viz., tampons of glycerine, copious syringing with very little hot water, painting cervix with Churchill's tincture of iodine, &c.—occupy a very considerable time, which prolonged treatment (unless the patient is able and willing to pay for) "is more honoured in the breach than the observance." Superficial firing by caustics or smouldering pieces of carbon held in contact with the cervix by forceps is not sufficient in well-marked cases of chronic hypertrophy to obtain the desired result within a reasonable time. Having observed the good effects on enlarged tonsils by the employment of ignipuncture, I have given it a trial, and can strongly recommend it as a useful adjunct in these cases. A thermo-cautery of small size and point (Paquelin's) will be found the best for the purpose, but those who do not possess this valuable instrument can obtain equally good results with a copper rod,

sharp at the point, and with solid bulb about half an inch from the top, so as to retain the heat while the necessary number of punctures are made through a wooden or celluloid cylindrical speculum. This cautery can be heated with an ordinary spirit lamp till red-hot, held in the tissues for a few seconds, while each puncture, about a quarter of an inch, is made, and then withdrawn. There should be no bleeding observable if the operation has been properly performed, such being caused by the cautery being either too hot or too cold. My usual practice is to blow a little boric acid (with my vaginal insufflator) over the punctured surface, and make no examination for about a week, when the operation can be repeated if necessary. I have also found ignipuncture of great value in lacerations of the cervix when hardly bad enough to demand Emmet's operation. Little pain, if any, is produced unless the operator is unwise enough to allow the patient to observe the preliminaries.—*The Lancet, September* 12, 1891, *p.* 611.

88.—ON THE TREATMENT OF PUERPERAL FEVER.

By J. W. Byers, M.D., Physician for Diseases of Women to the Royal Hospital, Belfast.

I regard local treatment as of the utmost value in the management of this disease ; but I cannot insist too much on the great importance of its being done early. I am afraid too many of us in the past have waited, when our patients became feverish after childbirth, in the hope that we had merely an attack of so-called "milk-fever," or that the constitutional disturbance present was due to a "chill," the result of cold, until the persistence of the illness and the failure of diaphoretics and quinine showed clearly that the complaint was puerperal fever, and so, unfortunately, the time for which there might have been hope for local treatment has been allowed to pass. In any case, therefore, in which fever sets in after confinement —in which there is no obvious local cause to explain its occurrence—I am a strong advocate of disinfecting the genital tract. This can best be done by using a 1 in 4,000 corrosive douche. A few precautions may be useful as to the employment of the douche :—

1. The patient is best kept on her back.
2. The douche should be given hot, so as to stimulate the uterus to contraction, and the antiseptic solution and the water should be well mixed before being added to the douche reservoir.

3. The intra-uterine tube should either be in the form of a double-channelled catheter (Bozeman's), or a grooved glass tube, so as to provide for a return current, and to prevent the possibility of distension of the uterus.

4. Before using the douche the external genitals are to be washed with wood-wool, squeezed out of the 1 in 1,000 corrosive solution, the vulva is then to be syringed, then the vagina, and while the fluid is still running the tube is to be passed into the uterus. The uterus should be grasped firmly by one hand, and at the end of the operation, when the tube is withdrawn, it should be squeezed firmly from the abdomen, and pressed downwards, so as to drive the fluid not only out of the interior of the uterus, but out of the vagina. Further, to prevent any accumulation of fluid through "ballooning" of the vagina, and possible hydrargyrismus, the perinæum should be drawn backwards by the tube, so as to let the fluid all drain away. By asking the patient to cough she will assist in the expulsion of any fluid.

5. The reservoir for the douche must not be more than a few feet above the level of the patient. Some have said that the uterus should be washed out after delivery only under the following conditions:—pyrexia, with fetid discharge; retained placenta or membranes after birth of a putrid fœtus; but I would advise it in any case of fever setting in after labour. In cases in which sublimate douching is regularly employed it is well, as Boxall has pointed out, to encourage its elimination (in case of absorption) by the kidneys, by giving a copious supply of liquids (lemonade), and still more through the intestines, by giving saline aperients, as a drachm of sulphate of magnesium thrice daily. While fœtor of the lochia is a strong indication for the douche, yet, on the other hand, we may have a patient becoming poisoned in sapræmia, or dying from septicæmia, and yet no foul odour may be detected on vaginal examination. I have seen cases frequently which set in with a rigour and high temperature on the third day yield to this form of treatment. They were probably cases of sapræmia in which the douche did its good by destroying the micro-organisms, as well as the poison evolved in their growth. Sometimes, in case the temperature rises, the douche has to be repeated, say twice in the twenty-four hours. When there is a fetid discharge, and the douche has washed away a piece of placenta, or a portion of membrane, or in cases in which such matters have been removed by manual extraction, after employing the douche, I have found the use of Ehrendorfer's iodoform bougies of considerable service. These are made about the size and shape of the little finger; each contains 100 grs. of iodoform made up with glycerine, gum acacia, and starch. After washing out the

uterus, they are introduced by means of a pair of forceps up to the fundus. In their gradual melting they will, it is said, keep the genital tract aseptic for three or four days. I have used these iodoform bougies in several cases with advantage. There is still another form of local treatment which I employed with signal advantage in a very bad case of septicæmia last May. The lady, on the third day after her first confinement, had a severe chill, followed by high fever and grave constitutional disturbance. Sublimate intra-uterine douches caused a slight fall in the temperature, but neither they nor the internal administration of quinine, antipyrin, salicylate of sodium, or Warburg's tincture seemed to have much effect on the general course of the disease, until I used the curette. After scraping the interior of the uterus, and using the douche, a quantity of *débris*, apparently diseased endometrium, came away, and a decided change in the patient's condition set in, which eventually culminated in recovery. Since then I noticed that von Braun-Fernwald (*Arch. für Gyn.*, Band XXXVII.) has written a paper, in which he states that out of 7,600 women delivered in the Vienna clinic the uterus was scraped in 101 cases, and of these, while 5 died, 96 recovered. He gives the following as the indications for curetting of the puerperal uterus :—1. Early onset of fever. 2. Deficient involution of the uterus. 3. Lochia of unnatural colour, offensive, and often containing fragments of decomposing tissue. In my case I simply curetted, and washed out the uterus afterwards, but Braun-Fernwald advises that, after the curetting and washing out, the uterus should be compressed between the hands to cause contraction. A piece of iodoform gauze, soaked in tincture of iodine, is passed into the uterine cavity. If there are any fissures in the vagina, they are painted with tincture of iodine, and the vagina is packed with iodoform gauze. The patient is put back to bed and given brandy, and locally over the uterus an ice-bag is applied. At the end of twenty-four hours he removes the gauze plugs, and afterwards the vagina is washed out once in twenty-four hours with an antiseptic solution. Any swelling or tenderness on either side of the uterus, or any fixation of that organ, contra-indicates local treatment applied to its interior. If there are any foul or diphtheritic-looking sores in the genital canal, these are treated by the local application of iodoform in powder or in ointment. The previous removal of any sloughing tissue, or the touching of the sore with a strong caustic, is often of use. Local treatment, such as I have recommended, will not, unfortunately, succeed in all cases. The poison of septicæmia is often too virulent and too active in its effects, but I am confident of one thing, that in the treatment of puerperal fever local measures have been far too much neglected.

When local measures fail, or when they have not been tried, our aim is to sustain the patient in her fight with the disease, and to attack symptoms as they arise. In such circumstances all of us know the bad prognosis in many cases. We give as much concentrated nourishment in the liquid form as the patient can take—beef-tea, meat-jellies, eggs, milk, &c.—alcohol if the pulse is weak, and opium if there is pain, with the local application of poultices, and anodyne fomentations for localised tenderness. We may attack the fever with cold applications, cold or tepid baths, and the internal administration of quinine. I have not seen much benefit from antipyrin, salicylate of sodium, tincture of aconite, sulpho-carbolate of sodium, turpentine, or Warburg's tincture. In my own experience the best line of general treatment in such cases is to endeavour, by plenty of nourishment and stimulants, to keep up the patient's strength, to give quinine, and to use cold applications for the fever, to allay pain with opium, and to open freely and drain any local accumulations of matter. I have no experience of opening the abdomen for general puerperal peritonitis. It has been done by making a small incision, introducing a gum-elastic catheter, or nozzle of a douche, so as to wash out thoroughly the peritoneal cavity with warm water; but so far the results have not been very brilliant.—*Dublin Medical Journal, June*, 1891, *p.* 479.

89.—ON PUERPERAL ECLAMPSIA.

By A. L. Galabin, M.D., F.R.C.P., Obstetric Physician to Guy's Hospital.

Some have alleged, in disparagement of the importance from an etiological point of view of the association of albuminuria with eclampsia, that many pregnant and parturient women have albuminuria without getting any convulsions. This has been founded chiefly on observations by French authorities, such as Blot, Petit, and Hypolitte, who found albuminuria in from 14 to 20 per cent. of women shortly before, during, or just after labour. In many of these the proportion of albumen appears to have been slight, and recognised only by specially delicate tests. On the other hand, some observations in the Guy's Hospital Charity gave a proportion of only 2 per cent. in parturient women of albuminuria, recognisable in the ordinary way by heat and nitric acid. Moreover, in eclampsia there is generally not only albuminuria but a diminished secretion of urine, and a still greater diminution in the proportion of urea excreted. Again, women suffering from chronic Bright's disease more frequently than not escape eclampsia, and those who suffer from

convulsions are commonly not known to have Bright's disease until either premonitory signs of eclampsia or actual convulsions appear, and therefore may be presumed to suffer from a recent attack of kidney disorder. I think, therefore, it may be said that there is no evidence that an albuminuria in pregnant women, resembling that associated with eclampsia but without the occurrence of convulsions, is at all a common complaint.

Given the existence of nephritis, the oldest explanation of the association of albuminuria with eclampsia, namely, that eclampsia is a form of uræmia, and that a poison retained in the blood is, directly or indirectly, the exciting cause of the convulsions, appears to be still the most reasonable. It has obtained some further support from the observations of Dr. Herman, published in the *Obstetrical Transactions*. Dr. Herman shows how close is the connection between the severity of the convulsions and the diminution of the secretion of urea. He shows, also, that when after delivery the convulsions cease, immediately or gradually, and the patient recovers, the quantity of urea secreted rapidly improves ; but that when convulsions continue and the patient dies this is not the case.

It does not appear to me to be any disproof of the uræmic theory of eclampsia that, in some exceptional cases, the urine before any convulsion, or immediately after the first convulsion, has been found free from albumen, but albuminuria has supervened afterwards. In some of these cases casts have been found in the urine, or the albuminuria has persisted for a long time, thus showing that there was really nephritis, and not merely a passive transudation of albumen due to the venous congestion resulting from the convulsions. In these cases it appears to me that the convulsions may be due to a pre-albuminuric stage of nephritis. Such a stage is recognised in the course of the chronic granular kidney, and it is not unreasonable to suppose that it may exist in an acute disease. For the kidney is made up of several parts, and that which is supposed to be most concerned in the transudation of the albumen, namely the glomeruli, is not the same as that which excretes urea and other solids. The two may not become affected exactly simultaneously.

It has, however, been supposed by some that the nephritis is not the cause of the convulsions, but that both nephritis and convulsions are the result of some common cause.

Many of the modes of treatment in favour are based more or less on theoretical grounds, and it is very difficult to determine their relative value. Statistical comparisons of relative mortality will hardly solve the question ; for the most active and heroic remedies are apt to be reserved for the most severe cases, and thus the milder methods, such as the administration of diuretics, bromide of potassium, or chloral, are apt to show the best results,

and obtain a factitious credit for efficacy. Thus, in the statistics given by Dr. Auvard, in his valuable recent monograph on eclampsia, the result of no treatment at all shows a mortality of 25 per cent., which is better than the result of the most favourite methods, and better than the average mortality of the whole, which was 31 per cent. Statistics can only be of value if the same method is used for all cases over a definite interval, long enough to eliminate the results of chance.

I can have no doubt, both from recorded cases and from cases I have seen myself, that venesection, especially venesection to a large amount (40 ounces or more) will sometimes stop the convulsions when other means fail. I consider it more doubtful whether it is so valuable as other means to promote the recovery of the patient, and rather suppose that it renders her more liable to death from some complication. It is possible, however, that, with the modern antiseptic midwifery, this risk may have become reduced.

My predecessor as assistant obstetric physician at Guy's Hospital, the late Dr. Phillips, published in the *Guy's Hospital Reports* for 1870, statistics to show the improved mortality in eclampsia obtained by the substitution of the administration of chloroform for venesection. Since 1868 venesection has been rarely (I believe never) used in our charity. In the last 50 cases recorded before the change of treatment, the mortality was 30·0 per cent. ; in 34 cases since that time it has been 20·5 per cent. This mortality appears less favourable than it really is, for the slighter cases have not been included in the record. There were only two deaths from eclampsia in 25,489 deliveries in the ten years 1875-85. At any rate it compares favourably with the statistics given by other authorities. Thus Dr. Auvard gives 35 per cent. as the mortality of cases treated by venesection.

Venesection may be adopted on one of two different principles in eclampsia : (1) a moderate venesection to relieve the vascular system in cases in which there is extreme venous congestion and embarrassment of the lungs (this is analogous to the venesection practised sometimes in bronchitis, and it seems to me a reasonable measure) ; (2) a venesection to stop the convulsions, and for this purpose repeated if necessary, or carried to a very large amount. The statistics which I have just given appear to me rather adverse to this form of venesection.

To other modes of treatment I can only just allude. Thus there is the treatment by large doses of opium or morphine, which *a priori* would seem unpromising, but which has been strongly advocated by American authorities, and of late has been highly praised by the Germans, and especially by Veit.—*The British Medical Journal, September* 26, 1891, *p.* 679.

90.—ON PUERPERAL ECLAMPSIA.

By Robert Barnes, M.D.

It seems to be taken for granted, by Dr. Galabin, especially, that nephritis and the attendant albuminuria and uræmia cause the convulsions. He states indeed the "form of nephritis associated with eclampsia appears to be especially severe in its effect of diminishing the excretion of solids, and that in the puerperal woman reflex excitability is naturally increased in preparation for the process of labour." Where is the proof that the kidney is inflamed? Because there is sufficient evidence of inflammation in acute and chronic Bright's disease, one credential of which is the presence of albumen in the urine, does it follow that whenever there is albumen in the urine the kidney is inflamed? If it be urged that there is further evidence of inflammation in the state of the kidneys revealed by necropsy, it may be objected that there is a wide difference between the conditions of cases that end fatally and cases that recover. Not to insist too much upon this distinction, it is not unreasonable to submit that some of the cases ending fatally do so greatly because the kidneys are too completely disabled by inflammation or other change; whilst the numerous cases that recover do so because the kidneys are only functionally affected. A strong argument in support of the latter proposition is this: the rapidity, even suddenness, of the recovery of the kidney power when the cause of the convulsions—the pregnancy—is removed. Is there any analogous example of acute inflammation of an organ passing away in a few hours, or even minutes? More than this, disease of the kidney is not constantly found, even in fatal cases. Depaul (1854) stated that in the necropsies he had made, the kidneys were perfectly healthy, or simply congested. It is further certain that in some of the cases in which disease was found, this was of chronic character antecedent in origin to the pregnancy.

Let us now examine the relations of albuminuria to eclampsia. Dr. Byers puts the case as follows:—"Does the kidney affection cause the eclampsia, or does the eclampsia give rise to the abnormal state of the kidney; or, finally, is there some primary cause occasioning the convulsions, and at the same time giving rise to the kidney lesion? Dr. Braxton Hicks has advanced the view that the convulsion may cause the albuminuria, but this theory has met with little support." Dr. Byers thinks Dr. Hicks's view is disproved by the fact that no albumen has been found in the urine of many patients after an epileptic attack. The argument is altogether strained.

It is enough to reflect that epilepsy is not puerperal eclampsia. The cases are essentially distinct. Dr. Hicks shows clearly the

fallacy of Dr. Byers's argument in the *British Medical Journal* of October 3rd. In the discussion under comment Dr. Byers adverted especially to the researches of Leyden. This pathologist found that when the kidneys in three fatal cases of eclampsia with albuminuria had remained for a time in spirit the fat in great part disappeared, and then the organs on microscopic examination appeared to be normal, and accordingly inferred "that this fatty condition is not a degeneration but an infiltration." That is to say that, even in some fatal cases, the appearances taken to show inflammation really indicate an exaggerated physiological condition similar to that which I have described in the mucous membranes of the pelvic organs.

The believers in the nephritic theory think their case is confirmed by the observation of granular casts and epithelial scales along with albumen in the urine. But this is a fallacy not difficult to explode. Under the dominant vascular tension of pregnancy (and this is open to direct observation in the living subject) the mucous membrane of the pelvic organs undergoes an intense degree of hyperæmia which may be called congestion, but which it would be absurd to call inflammation. This hyperæmia in the cervix uteri and vagina is marked by deep red and purple coloration, by tissue engorgement, by the profuse shedding of epithelial scales and exudation of muco-albuminous fluid. These appearances, indeed, constitute one of the most obvious objective signs of pregnancy. It is quite legitimate to infer that a similar condition exists in the kidney, which is within the sphere of similar influences. And, be it noted, we find these conditions present in cases free from excess of albumen in which the pregnancy and labour run a healthy course. This is described in the work referred to, but there is the confirmation of strong analogy in the researches of Tarnier, De Sinéty, Leyden, and others, as to the changes wrought in the liver in pregnancy. These changes I have myself observed, and, working with me, the late Dr. Sutton at the London Hospital and Dr. Ewart at St. George's Hospital have made similar observations.

What, then, are the essential factors of eclampsia? It is clearly not necessary to invoke disease, inflammatory or other, of the kidney, since clinical observation proves that eclampsia may break out in subjects whose kidneys are sound; it is equally clear that albuminuria is not the cause, since eclampsia breaks out where no albumen is detected in the kidney. The theory that the immediate cause of the convulsion is some poison circulating in the blood rests upon strong physiological and clinical evidence. True, what that poison is has not been shown. Urea is found in the blood and is wanting in the urine. Gegenbauer and George Harley were among the first to attest

it. In one case in which I bled the patient, Dr. Bernays found urea and uric acid in the blood. This does not prove that urea is the active poison. All that is known positively is that the kidneys, and the liver often in similar cases, are checked in their function of elimination. What the kidneys ought to excrete is retained in the blood. The noxious elements have certainly not been clearly identified. For this reason I have proposed the word "urinæmia," as not committing to an absolute dogma; and even this term is perhaps too narrow. The intoxication theory is very happily expressed by Dr. Auvard when he says, "Eclampsia is the result of a 'strike' on the part of the organs of elimination." The liver is also on "strike."

But, admitting the poison factor, the problem is not entirely solved. There is another and an essential factor which was very imperfectly recognised in the discussion; that is, the exalted nervous and vascular tension special to pregnancy. The increased nervous tension was, indeed, adverted to, but the attendant high arterial tension was not even mentioned. Now this high arterial tension is the immediate efficient cause of the kidney struggle and "strike." It is not a little remarkable that the brilliant researches of Dr. Mahomed demonstrating this arterial tension as giving rise to the pressure on the circulation in the kidney should have been overlooked. These researches explain the occasional occurrence of convulsion before the appearance of albuminuria; they prove that there is a prealbuminuric stage, the first stage of the kidney trouble. His observations, followed up by those of Fancourt Barnes with the sphygmograph, throw a new light upon the genesis of convulsion.

It is associated with a condition not adverted to in the discussion, namely, the normal hypertrophy of the heart evoked by pregnancy. This was first described by Larcher in 1857. Ducrest, Blot, Joulin confirmed this physiological fact; and I, having had opportunities of assisting at some of the observations made in Paris, and of making others in England, have almost invariably found the weight of the heart of women dying soon after labour to be an ounce or more in excess of the standard of eight or nine ounces. The observations of Marey, Mahomed, Macdonald, Fancourt Barnes and others demonstrate this hypertrophy of the heart and consequent high tension. Now this state begins in early pregnancy; it continues throughout while the child is alive; and under the mutual reactions with exalted nervous tension may so overpower the natural balance of the functions that convulsions may burst out before the appearance of albumen in the urine. The convulsion does not restore the balance; the underlying factors of nervous and arterial tension remain, and presently albuminuria may appear.

In many cases the first call on the physician is to see the woman in convulsion. He, of course, examines the urine, and in all probability finds albumen. It does not follow that the convulsion was the cause of the albuminuria, or that the albuminuria was the cause of the convulsion. Both phenomena are due to the exaggerated nervous and arterial tension. The altered constitution of the blood certainly is a third factor, and it is probable that advancing toxæmia may act as the immediate cause of the explosion. The increased proportion of water and the diminution of red globules are established facts. It is not so generally known that the blood "cups" when drawn into a basin. This shows excess of fibrin. This has been taken to prove that there was fever. This, I—who am one of those who have bled, and seen pregnant women bled by others—am in a position to affirm that the blood of gravid women may "cup" when there is no fever. This characteristic must be weighed in connection with the hypertrophy of the heart and the other physiological phenomena of pregnancy.

The above phenomena being physiological, organs strained to the utmost become unequal to their functions. Over-strained physiology is, indeed, perilously near to pathology. Disease may be induced if the strain is kept up, or, on the other hand, a critical cataclysm, such as abortion, or labour, or a copious hemorrhage, may take off the strain, and physiology resumes her sway. Or the over-wrought nervous system may give way to convulsion, which may eventuate in recovery, protracted disease, or death.

The principles of treatment flow logically from the obvious etiology of the affection. In the whole range of medicine there is probably no case in which the disease so clearly dictates the treatment. In the first place, we know the main cause of the disease, the pregnancy. Some specialists, ignoring this primary factor, have enunciated the catching aphorism, "Treat the convulsion or the albuminuria, and let the pregnancy take care of itself." It would be difficult to imagine a sentence composed of two more absurdly contradictory propositions. It amounts to saying: "Treat the effect, and let the cause go on acting." I have not seldom had to contend against this theory. Wherever we find marked albuminuria, with or without convulsion, in a pregnant woman, the first and most pressing indication is to bring the gestation to an end, to reduce the complication to its simplest expression, and then to treat what remains of the effect. In many cases nothing more may be required. *Sublatâ causâ tollitur effectus.* Frequently Nature takes the right course, and frees herself from impending danger by abortion or premature labour. This is one example of what may be called "conservative abortion." Timely effected, it may

save two lives; the opportunity neglected, two lives may be lost; or if the mother is saved it is possibly at the expense of her future health.

But we cannot always depend upon delivery in time. The next indication is to moderate the high nervous and vascular tension. Here again Nature sometimes guides the physician. A copious flooding, which may or may not be the precursor of abortion, sets in, and the fit and the albuminuria may be at once relieved. This suggests venesection—a disputed point. It is not wise to make venesection a rule in practice, but the empirical evidence in its favour in appropriate cases is incontestable; nothing so quickly lowers the action of the heart.

The next indication is to calm the nervous irritability and reduce nervous tension. This indication is of extreme importance. A golden rule I have always long enforced is "in any case in which a fit is probable, to make no examination, not to pass the catheter, to force no food or medicine until the patient is under the influence of chloroform." The slightest disturbance, especially touching the genitals, may provoke a fit.

In the prealbuminuric stage, salines, calomel, podophyllin are eminently serviceable. In the eclamptic stage chloroform comes first. It will frequently avert or shorten the fit. Chloral also acts well. I have seen inhalation of nitrite of amyl act excellently. I advised recourse to this agent in my Lumleian Lectures in 1873. Of pilocarpin I am not in a position to speak with confidence. Antipyrin is worthy of trial, but I doubt if it will act as well as chloroform or nitrite of amyl.

The main motive of this communication is to invite more extended inquiry into the relations of albuminuria and eclampsia; to show that there is no necessary or constant association of the two conditions; that we cannot regard either as the cause of the other; and that, therefore, a primary cause of both exists in the constitutional conditions evolved by pregnancy. All rational treatment flows from the recognition of this elementary fact.—*The British Medical Journal, November* 7, 1891, *p.* 987.

91.—ON THE PROGNOSIS AND TREATMENT OF PUERPERAL ECLAMPSIA.

By J. G. Swayne, M.D., Consulting Obstetric Physician to the Bristol General Hospital.

The prognosis in puerperal eclampsia is always serious. As Dr. Galabin *(Manual of Midwifery)* points out, the mortality of the mothers is now reckoned at about 30 per cent., and of the children at about 50 per cent. In my own cases, 11 mothers in 36 died, which is about the same average, and 19 children, which

is slightly above this average. All observations, however, tend to show that the earlier the convulsions occur with regard to labour, the more unfavourable is the prognosis. This is shown most conclusively in my own cases, in which six mothers and nine children died in eleven cases of convulsions *before* labour; five mothers and nine children in twenty cases *during* labour, and none of either in five cases *after* labour. This last is unusually favourable in comparison with the experience of others; for Dr. Galabin states that the maternal loss in those after delivery is on an average about 8 per cent. But these five cases of mine are but a small number from which to draw any very definite conclusions.

I have already pointed out how widely the prognosis of cases of puerperal eclampsia differs according to the time when the attacks came on, whether before, during, or after labour; and I shall now show that there is nearly as wide a difference in the *treatment* of these three classes. This chiefly refers to the question whether it is advisable to hasten delivery. Of course, in the third class, delivery is already accomplished, and is therefore out of the question. In the first class of cases, when there are no signs of labour, it is still a *vexata quæstio;* but I think that in the present day most authorities are agreed that, when all other remedies fail, delivery should be had recourse to as a *dernier ressort.* In the second class of cases, which are by far the most numerous, nearly every authority, I think, is of opinion that it is most desirable to hasten delivery.

There is another point in the treatment of puerperal eclampsia about which medical opinion is not, I think, so unanimous as it ought to be. I refer to the use of blood-letting in such cases. I have long held a very strong opinion as to the value of venesection, and have at various times published cases in support of my opinion. More than twelve years ago an article appeared in the *Medical Circular* for May 15th, 1878, in which the following reference was made to some of these cases: "Dr. Swayne has from time to time brought forward his cases at the Bath and Bristol Branch of the British Medical Association; and in the current number of the *Obstetrical Journal* is recorded one in which the withdrawal of ℥xxx of blood in a full stream from a large orifice was followed by immediate and permanent relief of all the symptoms. The convulsions had gone on for twelve hours before bleeding was resorted to. They had increased in frequency, until at last as many as three took place in an hour, notwithstanding that a full trial had been given to anæsthesia in the form of hydrate of chloral and bromide of potassium; three half-drachms of the former and three drachms of the latter having been given. The bleeding appeared at once to produce a decided constitutional effect. The swollen livid

face became pale, the breathing less stertorous, and the pulse soft and feeble, instead of full and throbbing. From that time the fits, which were recurring three times in an hour previously, only returned four times during the next ten hours, and were much mitigated in severity. Signs of labour also came on, and delivery was soon completed with the forceps." I could, if there were time, give many similar cases ; suffice it to say that my own experience has convinced me that in the treatment of puerperal convulsions the three most important remedies are, bleeding, anæsthetics, and delivery. The secondary remedies which were used in most of my cases were purgatives of calomel and jalap, enemata of turpentine and castor oil, and also of assafœtida, cold application to the head, and counter-irritation by blisters, sinapisms, &c. I need not stop to discuss the efficiency of these last, but will merely state briefly my experience of the first three. On referring to the notes of my 36 cases, I find that in 24 (just two-thirds), bleeding was resorted to, the quantity of blood taken varying from ten to thirty ounces. In 18 it was decidedly beneficial, and appeared to be the most efficacious remedy employed. In nearly every case it was speedily followed by a great diminution in the amount of albumen contained in the urine. To this cause I believe that it owes its great power as a remedy.

By anæsthetics, I mean the inhalation of chloroform or the administration of chloral either by the mouth or rectum. These two remedies, which are nearly similar in their action, are much better than opium, which they have all but superseded. They are both very valuable, especially chloral. I should also mention bromide of potassium, which is an excellent auxiliary. Anæsthetics were employed in 14 of my cases. In four of these the symptoms were much relieved or altogether cut short by chloroform, and in three by chloral. In one case, bleeding gave relief for a time ; but the fits returning, the patient was kept under the influence of chloroform for seven hours, and had no more convulsions. In another case chloral in large doses was equally efficacious. Delivery, either by the induction of premature labour, by the forceps, by turning or craniotomy, was had recourse to in 14 cases, and in eight gave decided relief. The result of my own experience is, that I am inclined to consider bleeding and anæsthesia as the two important remedies, I can hardly say which is the more important ; whilst delivery is little inferior to them, its inferiority being due to the circumstance that it is, of course, not available in *post partum* convulsions, and not always in those that occur before labour. Where it can be applied, the forceps is the best and safest mode of hastening delivery.—*Bristol Medico-Chirurgical Journal, March*, 1891, *p.* 4.

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Van Houten's Pure Soluble Cocoa.—The Pure Soluble Cocoa of Van Houten continues to enjoy a pre-eminent position among the many forms of cocoa supplied to the public, and deservedly so. For perfect purity, delicacy of flavour, and nutritive value, it occupies the foremost place in the class of food beverages to which it belongs, besides being economical, in that it goes further than its competitors. Medically speaking, we have found it an invaluable aid in dietetic treatment on account of its great digestibility.

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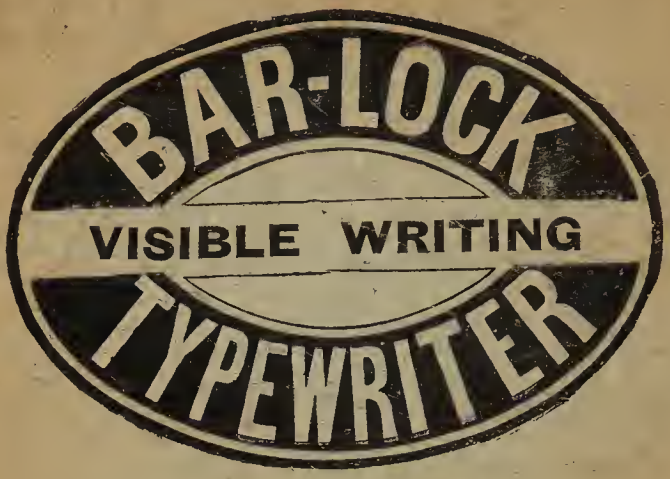

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